POSITION PAPERS

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THE PROJECT OFFICE IN MISSOURI

The Great Plains School District Organization Project
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ELEMENTARY EDUCATION

IN

MISSOURI PUBLIC SCHOOLS

by

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INTRODUCTION

As we pass the middle of the decade of the sixties and speed toward the seventies, Missouri citizens are faced with awesome responsibilities for the education of their elementary and secondary school children. Never have Missouri citizens provided so many dollars for education and never have they faced the task of providing effective education for so many children.

In the face of increasing enrollments and increasing costs of public education, Missouri citizens and educators are faced with the task of achieving the most efficient means of utilizing their resources, financial and human resources, to the purpose of providing the best possible education for their children. Although economic efficiency may mean many things, it means, at the very least, the organization of educational units best suited to the task at hand.

Few data are available on which to base the size of the optimally effective and efficient unit. None-the-less, the task must be faced in the interests of children who "will not pass this way again." It shall be the task of this paper to study the distribution of elementary school children in Missouri school districts, to describe a sound program for Missouri elementary schools, and to attempt to relate the first two purposes to one another.

Distribution of Elementary School Children by District in Missouri Public Schools

The 1967-68 Missouri School Directory contains reports of enrollments for the current year. In the Directory, 740, 424 children are reported to be enrolled (Kindergarten through grade eight) in Missouri public schools. In Table I are reported the number of districts by the number of elementary school children enrolled for the school year 1966-67.

TABLE I

Number of School Districts by the Size of Elementary School Child Enrollment* 1966-67

Number of Elementary Children Enrolled	Number of Districts	Number of Children	Cumulative Percentage
00-249	173	21,539	3.0
250-499	145	54,303	10.6
500-749	70	43,715	16.7
1000-1249	17	19,117	23.3
1250-1499	10	13,745	25.2
1500-1749	10	16,245	27.5
1750-1999	6	11,247	29.1
2000-2249	3	6,374	30.0
2250-2499	1	2,374	30.3
2500-2749	4	10,898	31.8
2750-2999	4	11,498	33.4
3000-45,000	26	358,312	83.3
Kansas City & St. Louis City	2	119,776	100.0
Totals	504	718,000	

* Figures in the third column are approximations. In addition, some districts count of elementary children include 7th and 8th grades; others include Kindergarten through 6th grade. The total of 718,000 is the estimated total enrollment through grade 8 as reported by the State Department of Education in the 1966-67 Missouri School Directory, p. 17. This report does not include three-director elementary districts.

It may be seen that approximately one-fifth of the public elementary school children attended schools in districts having fewer than 1000 children enrolled in the district. The strides that have been made in Missouri toward creation of larger district units is partially apparent when one notes that two-thirds of the elementary pupils attended districts enrolling 3000 or more elementary pupils.

In Table II are reported the enrollments in four of the most heavily populated counties and the City of St. Louis.

TABLE II

Elementary Pupils Enrolled in Four Heavily Populated Counties and the City of St. Louis 1966-67

Geographic Area	Enrollment	Number of Districts
St. Louis County	106,188	25
Jackson County	84,814	12
Greene County	17,919	9
Clay County	16,660	5
City of St. Louis	74,280	1
Total	225,581	52

The total enrollment of 225,581 children in the 52 school districts in these four counties and St. Louis represented 41.8 per cent of the estimated 718,000 children enrolled in Missouri public schools for the year 1966-67. Closer scrutiny, however, will reveal that a wide range of district size is represented in the 52 districts. This range is reported in Table III. District enrollment of elementary children ranged from 121 children to 74,280 children in the City of St. Louis.

TABLE III

Distribution of Districts by Number of Elementary Children Enrolled for Selected Counties, 1966-67*

Number of Children Enrolled	Number of Districts
0-299	2
300-599	8
600-899	3
900-1199	2
1200-1499	3
1500-1799	5
1800-2099	1
2100-2399	2
2400-2699	0
2700-2999	2
3000-3299	3
3300-3599	1
3600-3899	0
3900-4199	0
4200-4499	2
4500-5499	2
5500-6499	3
6500-7499	2
7500-8499	3
8900-9499	1
9500 and above	7

* St. Louis County, Jackson County, Greene County, Clay County, and the City of St. Louis

There were fifteen districts enrolling fewer than 1200 elementary pupils in these more heavily populated portions of Missouri. Although wealth and size do not increase hand in hand, efficiency is more highly and positively correlated to size. It would appear that from one-quarter to one-fifth of the districts in and near populated centers are organized into less efficient units.

DISCUSSION

The problem of developing efficient sized districts has more frequently researched and discussed in connection with studies of secondary education rather than elementary education. Several unique qualities of the elementary school have posed different problems for educators concerned with district organization. Most significant amongst them are the following:

1. In sparsely populated areas, reorganization of small districts often results in no large attendance area for elementary school pupils because of the reluctance to move away from the "neighborhood school" concept.
   This is in part coupled with the problem of transportation. Reduction of the number of elementary schools in a sparsely populated area would frequently require young children to ride busses for unusually long periods of time.

2. School supervisors in districts of larger area in sparsely populated areas must often spend large amounts of time traveling from school to school. Where travel time becomes a major problem, one might question how much efficiency had been produced by broadly based reorganization.

3. The elementary schools are not faced with the problem of subject matter specialists and number of courses offered as are secondary schools; hence, increase in the size of school attendance units at the elementary school level may not seem as significant as it does at the secondary school level.

Not all of these unique qualities of the elementary school may be of equal significance to educational outcomes for pupils at the elementary level. Several additional statistics may shed additional light on the problem.

Over 90% of the supervisory and administrative assistance below the level of superintendent of schools is to be found in the 52 districts identified in Table II and Table III. If supportive staff can be considered essential to the development and maintenance of sound elementary

school programs, the vast majority of the districts in Missouri, and approximately 30% of the elementary pupils simply do not have the values of such support.

The problem of supportive staff was further explored by drawing random samples of districts enrolling from 0 to 749 elementary school pupils, and from 750 to 2499 pupils. These samples were 50% samples of the number of schools districts in these two size groups. There were 394 school districts (including three-director districts) in the small district group and 80 districts in the larger district group. The samples resulted in 195 smaller districts and 40 larger districts.

Several comparisons were made between these samples and are reported later in the report. Sufficient to say that at this point few of the supportive staff persons employed on a regular basis in Missouri public schools are employed in districts with fewer than 2500 elementary school pupils. (This does not include special programs under Titles I or III of The Elementary and Secondary Education Act of 1965.

The implication of this finding bears on the question of how supervisory personnel spend their time. It seems reasonable to conslude that it is a mute question. Districts with fewer than 2500 elementary pupils just do not have much supervisory or administrative assistance other than building principals and school superintendents. One might easily hypothesize that school districts of fewer than 2500 elementary pupils should consider either reorganization into much larger districts or the development of other supra-district arrangements through addition of supervisory and administrative help might be provided.

The problem of pupil transportation is still a difficult matter in sparsely populated areas. The solution may be retention of some schools (individual elementary school buildings) of less than optimal size in the most sparsely populated areas. School officials should not let this be used as an argument for putting off sensible reorganization, however.

The third uniqueness noted above may be one reason that district reorganization should move ahead at a vastly accelerated pace in most portions of the stare. The increasing rate of elementary school curriculum change will place increasingly frustrating demands on school personnel, both teachers and principals, to keep pace with educational change. In the third section of this report, several alternative plans are presented whereby programs of improvement may be provided in the more nearly rural portions of Missouri.

The geographic distribution of small districts (by elementary school pupil enrollment) is presented in the map in Figure 1. It is apparent that rural Missouri contains most of the state's smaller (under 800 elementary pupils enrollment) districts and also that the majority of the districts in rural MIssouri are small in terms of enrollment.

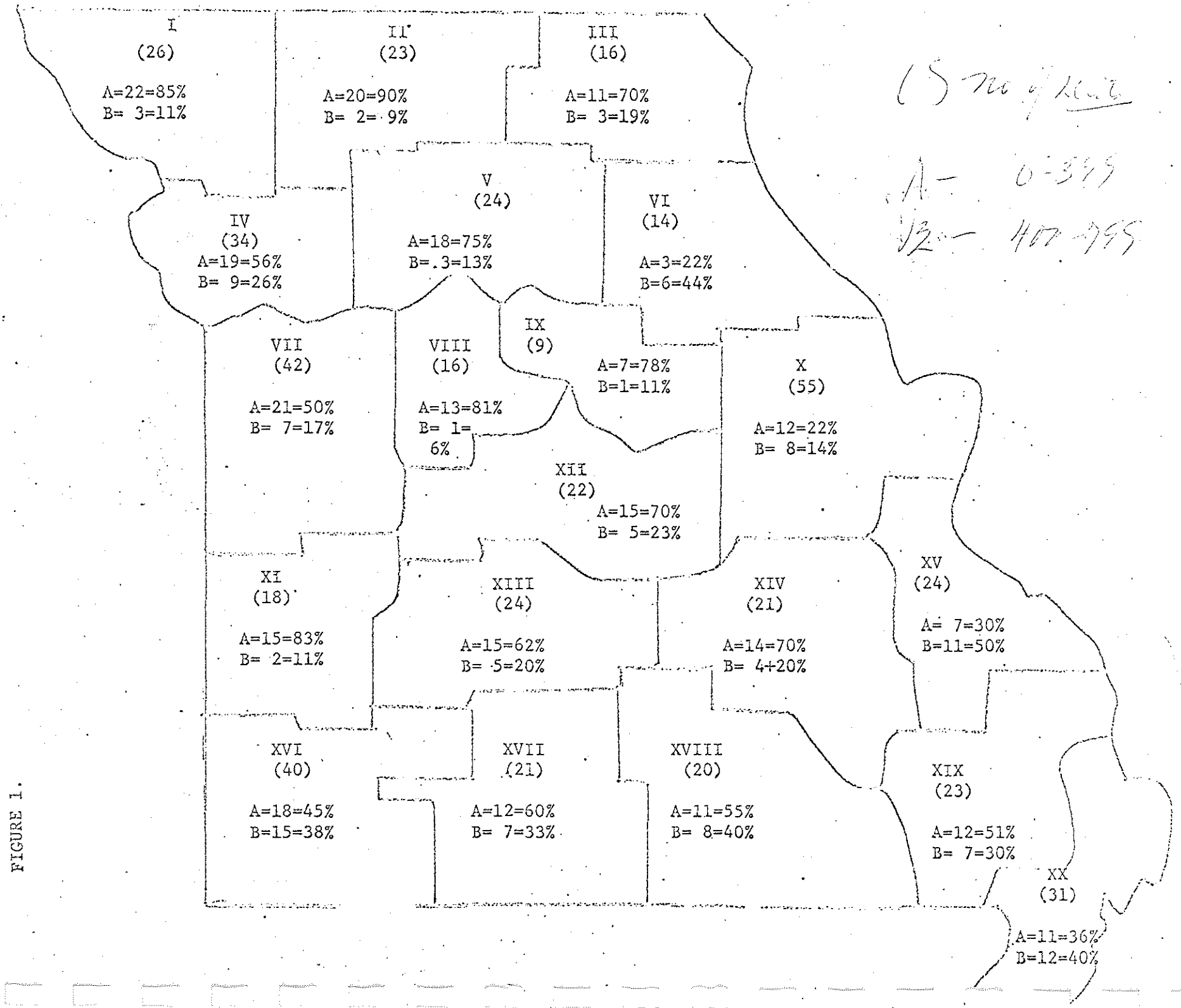
I
(26)
A=22=85%
B= 3=11%
II
(23)
A=20=90%
B= 2= 9%
III
(16)
A=11=70%
B= 3=19%
IV
(34)
A=19=56%
B= 9=26%
V
(24)
A=18=75%
B=.3=13%
VI
(14)
A=3=22%
B=6=44%
VII
(42)
A=21=50%
B= 7=17%
VIII
(16)
A=13=81%
B= 1=
6%
IX
(9)
A=7=78%
B=1=11%
X
(55)
A=12=22%
B= 8=14%
XII
(22)
A=15=70%
B= 5=23%
XI
(18)
A=15=83%
B= 2=11%
XIII
(24)
A=15=62%
B= 5=20%
XIV
(21)
A=14=70%
B= 4=20%
XV
(24)
A= 7=30%
B=11=50%
XVI
(40)
A=18=45%
B=15=38%
XVII
(21)
A=12=60%
B= 7=33%
XVIII
(20)
A=11=55%
B= 8=40%
XIX
(23)
A=12=51%
B= 7=30%
XX
(31)
A=11=36%
B=12=40%

FIGURE 1.

PART II

THE ELEMENTARY SCHOOL PROGRAM

All Americans who take seriously the late John F. Kennedy's challenge to "Ask not what your country can do for you; rather ask what you can do for your country," will include in their response the provision of education for the children and youth of our nation. sufficient to meet the demands of the Twentieth Century with vigor and wisdom. Few would deny the central place of elementary education in that educational response. Never has there been a time in the history of the worlk when the significance of a good start in schooling was as fully recognized as it is today. It is imperative that Missourians face their share of the responsibility for the education of America's children with the highest level of insight into what constitutes a strong and effective elementary school program. It is the purpose of this portion of this report to provide an overview of a strong, effective elementary school program for Missouri children.

Educators and the public still await answers to many basic questions upon which will depend the effective planning for the future. None-the-less, enough is known to provide valid and reliable educational targets toward which our resources should be directed if we really desire school programs of promise to our children.

The overview will be presented in two parts. The first will be concerned with the curriculum of the elementary school and the second will be concerned with the sefvices of the school. Within the framework of these major elements will be presented descriptions of curriculum and services that are presently believ ed to represent the best educational conditions that the public cna provide.

Basic to this presentation is the assumption that ability to make changes in the curriculum and services of our schools is as important as the ability to implement the curriculum and services that will be described. Without the ability to change quickly, our schools may not profit from the expanding body of research and development knowledge that is being produced at an ever increasing rate. Democracy exemplified in the local control of schools may fail us if it does not manage to produce the climate and mechanisms for change in the most rapidly changing world in which man has ever lived. The school district that accepts this assumption will be required to make a committment to financial and policy providions for administering and supervising change at the classroom level.

Elementary School Curriculum

Although change can be said to characterize much of the elementary school curriculum today, there are some guidelines that can be applied effectively to any school curriculum.

1. Curriculum should reflect a committment to the education of all the people's children.

2. Curriculum should reflect the fact of childhood in its content and design.

3. Curriculum should reflect the capacity of man to think, to feel, and to create.

4. Curriculum should produce not only a respect for reflection, but it should also produce a respect for responsible action based on those reflections.

A commitment to the education of all the people's children will result in an elementary school curriculum that takes into consideration the diverse background of experiences with which children come to school. It will mean that each school and each teacher in the school will study the children under his instruction to determine how they perceive their world. Each child's curriculum will start at his level of meaning and build thereon. Neither the color of his skin, the socio-economic status of his parents, not the intellectual or physical capacity of the child will limit his access to a meaningful educational experience in the elementary school. This guideline has implications for both the curricular content and the variety of instructional materials available to children. Recent research suggests that it also has implications for the placement of children in situations which maximize the opportunities for productive peer stimulation. No matter how deeply rooted our previous commitment to segregated education, research evidence supports the validity of the educational effectiveness of integrated education. It is no longer possible to consider curriculum content apart from the interaction between children which carries it and reinforces it in their lives.

Commensurate with the necessity to provide curriculum for all people's children is the necessity to provide where and when needed appropriate compensatory educational programs at every level. Evidence is growing to support the need for and value of continuous compensatory programs beginning at age three and continuing through age eight.[1] Where concentrations of disadvantaged children are unusually high, inservice programs may be required to assist teachers with improved curriculum and instructional approaches.

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[1]Bloom, Davis, & Hess; Compensatory Education for Cultural Deprivation, (1965 by Holt, Rinehart and Winston, Inc.) pps. 20-33.

A commitment to this first guideline must also include the provision of a curriculum and instructional program appropriate for handicapped children. Where the incidence of handicapped children is so limited that the district does not qualify for state assistance, the district must adjust so that appropriate programs are available. The district must either finance and administer the program from its own resources, it must secure programs through supre-district arrangements, or it must reorganize so as to provide appropriate programs.

The fact of childhood should be reflected in the content and design of curriculum. This guideline underlines the developmental quality of the curriculum and emphasizes the need to provide an articulated curriculum. Much has been written following Brunner's[2] summary of the Woods Hole Conference on the problem of developing the structures of the academic disciplines from which both elementary and secondary school curriculum content is derived. Many of the recent curriculum revisions in mathematics and science have featured emphasis on structure and process.

Although some five major elementary science schoolscience curriculum projects have been attempted, only two have resulted in material that is available to school districts inother than trial or experimental basis. Authors of several basic science textbook series have emphasized the processes of science as well as appropriate content.

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[2] Jerome Brunner, The Process of Education, Harvard University Press, Cambridge, 1960.

A cursory review of several curriculum guides for several Missouri districts fail to show evidence of efforts to articulate elementary science programs from Kindergarten through grade twelve. Such articulation should exist in a sound curriculum; however, articulation in an area of rapid change is, at best, difficult.

Perhaps the most important element in this guideline is the provision of a curriculum in each content area which not only makes use of significant structures inherent in the disciplines, but also begins with meanings that are within each child's repertoire of meanings. Although Brunner minimized[3] the "readiness"factor, he does emphasize the need for "intellectually honest" curriculum content. Certainly intellectually honest content must have roots within the meanings which children possess.

Mathematics in elementary school programs is a somewhat better situation. A recent study by Reys and Knowles[4] indicated that 91% of the 75 school districts surveyed used editions of mathematics textbook series no more than five years old. However, the study revealed that only district in the 75 had a mathematics consultant and that 60% of the districts used textbook company consultants. Only 22% of the districts had received help from consultants with the State Department of Education.

Reading and the language arts also should be characterized by the developmental quality. The weight of research indicated that

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[3] Ibid.

[4] Robert Reys and Lois Knowles, "What is the Status of Elementary School Mathematics," Elementary School Journal, Vol. 68, No. 4, January, 1967, pp. 167-171.

reading programs that use singular attacks on the problems of beginning reading are less effective than those which provide multiple approaches in beginning reading. Programs which approach beginning reading through both sight vocabulary development and phonetic training appear more effective than those using only one or the other of these approaches. These findings are supported by knowledge available on how children generally develop and how they learn.

The necessity of curriculum to reflect the capacity of man to think, to feel, and to create will be exemplified in the emphasis upon structure of academic disciplines, the emphasis upon thought processes appropriate to various disciplines and in the nature of the learning activities in which children engage.

The entire elementary school curriculum should be rich with opportunities to behave creatively. Some curriculum areas may provide richer opportunities for creative activity than others, however, art, music, and the language arts represent such areas.

Social studies, arithmetic and science provide many varied avenues through which cognitive skills may be developed. A sound curriculum should represent a balanced program of learning experiences including both the acquisition of knowledge and the acquisition of the intellectual skills by which that knowledge may be made meaningful. The use of the inductive approach to learning should not only provide the student with a fund of useful knowledge, but it should also result in the student being more skilled in using the inductive process to discover even more knowledge on his own. Such a curriculum will require the support of a wide variety of learning materials.

Little research information is available at present from which one might conclude how effective schools are in the development of cognitive skill. What little is available indicates that pervasive efforts will be required to bring about and sustain the kind of teaching required to achieve the objectives and qualities cited above. The implications of these findings will be cited in the third portion of the paper in connection with supervisory services.

Curriculum should provide experiences by which children gain in respect for their fellow beings and through which they may come value the many qualities possessed by people and the world in which we live. There are implications for the organization of the school as well as for curriculum and instruction if this quality is to be present. A school setting which places inhibiting and derrogatory labels on a child or a setting which separates children on the basis of irrelevant or discriminatory criteria may undo all that a sound curriculum may build. The impact of the now famous Coleman Report[5] is a substantiation of this point.

A curriculum which evidences a respect for responsible action as well as reflection will provide experiences which relate the knowledge and skills which children acquire to appropriate application within the whole of the child's life and the life of the home, community, nation, and world of which he is a part. Learning activities should emphasize the highest sort of human interdependency and help to foster self-control. Although the social studies should provide rich opportunities for the application of this guideline, the total curriculum is permiated with

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[5]James S. Coleman, et al, Equality of Educational Opportunity, Washington, D. C. Government Printers Office, 1966.

with equally valuable opportunities for achieving these qualities.

The study of community problems and the application of appropriate learnings and skills to the study and understanding of these issues offers a rich opportunity for many schools. Planned Progress programs in many parts of Missouri are good examples of action programs in which school pupils can have a part. Although most of these have been carried out by secondary school students, similar activities would be appropriate for many elementary school pupils.

Current Trends in Curriculum and Instruction

Although many curricular and instructional trends have been cited already, several others bear mentioning. The following represent a summary and extended listing:

1. Emphasis is being placed on structures within disciplines.
2. Processes of discovery are being given equal significance with the acquisition of knowledge.
3. New curriculum programs are providing new knowledge and providing new structures for its organization.
4. New materials and equipment are being developed with which instruction may be more easily and effectively individualized. This includes both hardware and software.
5. Physical education is including more attention to the idea of fitness.
6. Some reading programs are giving a greater place to linguistics and simplified alphabets such as I.T.A.
7. Much more attention is being focused on teacher behavior as a controlable determinant of learning through a variety of observational recording and rating techniques.
8. The social studies are being refined so as to provide refined structures as organizational modes and expanded to include more emphasis on knowledge from such fields as economics, sociology, and anthropology.

One can not be certain how much will endure of the trends cited above. Neither is it possible to ascertain the extent to which these trends are evident in Missouri elementary schools. Perhaps it is appropriate to speculate that programs of curricular and instructional improvements will be required on a broader scale than ever before. Past

history suggests that traditional provisions for supervisory (improvement) programs will be woefully inadequate in the face of change on so many fronts and which comes at such a rapid rate.

School Organization and Services

School services wich will be examined in this section of the report are:

School Organization
Administrative and Supervisory Services
Pupil Personnel Services
Library Services including the Provision of the full Range of Instructional Media
Transportation and Food Services

School Organization has for many years been a factor in the educational setting most continuously open to control. Buildings could be built, and once built, years usually had to pass until they could be abandoned or changed significantly. Organization could be changed.

The age-graded school concept, well established by the end of the War between the States, has been the most persistent organizational form for placing and moving children vertically through the school. Until the non-graded school concept was more articulately described by Goodlad and Anderson[6] in 1959, little was done to meet the challenge of the wide range of individual differences evidenced in most age groups except attempts at homogeneous grouping and such experimental organizational forms as Washburn's Winetka Plan and Parkhurst's Dalton Plan. Although few other formal plans emerged, good teachers did often referred to the necessity to "take the child from where he is."

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[6] John I. Goodlad and R. H. Anderson, Nongraded Elementary School, Harcourt, Brace and Co., New York, 1959.

Since 1950 the trend has been away from departmentalized organization toward the more nearly self-contained form of classroom organization. In 1960[7], 75.6 per cent of the elementary schools were organized on the self-contained basis [this did not exclud schools which had special music, art, or physical education teachers]. Although specific trends are not clear at this time, many school districts in the United States have "experimentad" with team teaching and cooperative teaching arrangements. Some of these plans represent a semi-departmentalization.

Research findings are not particularly helpful in the area of school organization. Results are often inconclusive or contradictory. Even the research on homogeneous grouping fails to provide definite and final answers. Perhaps the most consistent quality in the whole body of research is that most studies pit a single modification against either a "traditional" pattern or some singularly different form. Examples are homogeneous versus heterogeneous grouping; the self-contained classroom versus departmentalization, and the non-graded school versus the graded school.

Perhaps this singular commitment to one form is a major problem both in organization and in research. It may be much too much to expect of a single organizational form. Plus this, the qualities that make for real differences in the bahavior of children may not be as closely correlated with organizational form as we have suspected. Undoubtedly the most common criticism is that the criteria selected in most researchers represent too narrow a range of the outcomes of schooling.

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[7]Stewart E. Dean, Elementary School Administration and Organization, U. S. Department of Health, Education, and Welfare, Office of Education, Bulletin. No. 11, 1960. Government Printing Office, Washington, D. C.

The task of this report is not to settle all the problems of organization of elementary schools. Rather it is, at this point, the purpose of the report to provide whatever knowledge or logic exists about elementary school organization which may have significance for district organization. Therefore, rather than becoming lost in the morass of research, one should be directed to identify guidelines (or principles) which may help.

Ideas seem relevant at this point. The first is that several values of both the self-contained classroom and departmentalization seem desirable in any organizational form. The opportunity for the child to be known well by a supportive teacher and the greater opportunity to provide for the development of the interrelationship between knowledges appear to be potentialities of the self-contained classroom which should be retained. The opportunity to make better use of unusual interests or knowledges of teachers appears to be a desirable quality of departmentalization. Cooperative teaching seems to provide a more promising combination of these two qualities than any other form of organization for teaching and learning being attempted today. Probably the best example of this form in Missouri is the Title III (ESEA) program in Hawthorne School in Cape Girardeau. Coupled with the flexibility exemplified in the "middle school" in the Lindberg District in St. Louis County, one might find substantial guidance in the development of a promising organization.

The second idea is that organization should within reasonable limits provide sufficient diversity in peer groups that the optimum contribution of peer group stimulation is possible. The Coleman Report[8] also emphasized the great value to peer group interaction as a positive

[8] op. cit.

educational stimulus. Certainly the report causes one to view with skepticism the long term outcomes that may be expected from rigorously administered homogeneous grouping plans or any other plans that tend to rigorously limit variability on the basis or narrow criteria in classroom groups.

The third idea is that school (attendance unit) size is related to organizational climate in sufficiently significant ways as to cast serious doubt on the desirability of permitting individual elementary schools to get larger than twelve classrooms.[9] These are not absolute limits but any departure toward smaller or larger buildings is likely to be accompanied by a reduction in esprit de corps and an increase in hinderance and disengagement.

Administrative and supervisory support is intended to facilitate the instructional program of the school. Administration and supervision are only partially distinctive functions in the elementary school, if not elsewhere, and it may be expected that the elementary school principalship is a key figure in the support of the instructional program particularly in those circumstances where no other supervisory personnel are available. The orientation and supervision of beginning teachers, the on going processes of curriculum study and improvement, development of inservice programs, and a variety of smaller supervisory responsibilities usually fall on the shoulders of the elementary principal in the vast majority of the school districts in the state. [One should recall that 66 per cent of the elementary school pupils were in less than 60 school districts.]

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[9] Blaine L. Cole, "An Analysis of the Relationship of Selected Factors of Communication and Organizational Climate as They Relate to the Size of the Elementary School," Unpublished doctoral dissertation, University of Missouri, Columbia, 1965.

The number of non-teaching supervisory (non-administrative to a limited extent) support number 7 in the sample of districts so-called larger districts (750-2499 elementary pupils) and one in the sample of smaller districts (0-749) in the survey made for the purpose of this report. This is a count of the number of persons bearing the title of assistant superintendent for curriculum and instruction, elementary supervisor, director of elementary education, or elementary curriculum consultants. Generalized to the total population from which the 50 per cent samples were drawn, the number would be two for the smaller districts and fourteen for the larger districts. It would appear that unusually heavy supervisory responsibilities compete for the time of the elementary principals in the vast majority of school districts enrolling fewer than 2499 elementary school districts.

The plight of supervisory personnel is further revealed by a study of the 61 Missouri school officials bearing the title of elementary supervisor in 1964 reported by Cain.[10] Cain found complete agreement on 70 per cent of the functions of the supervisor when he asked supervisors, principals, and teacher to describe both the actual and the ideal functions of the supervisor. A contrast of ideal functions with actual functions revealed only 55 per cent agreement. A study of the position of director of instruction in Missouri schools by Barrows[11] also revealed conflict in perceived relationships with other positions in the schools. Although the

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[10]Gerald G. Cain, "An Analysis of the Functions of General Elementary School Supervisors in the Public Schools of Missouri," unpublished doctoral dissertation, University of Missouri, Columbia, Missouri, 1964. (an article summarizing this study can be found in the 1964 issue of School and Community.)

[11]H. L. Barrows, "A Study of the Position of Director of Instruction in Missouri Schools," unpublished doctoral dissertation, University of Missouri, Columbia, Missouri, 1964.

number of other administrators and supervisors seem to have a bearing on the functions of these personnel, the most significant feature is that the positions are more frequently described as administrative rather than supervisory where actual function is under consideration. This seems to be true no matter how heavy the ideal function was slanted toward supervision (improvement of instruction).

The conclusion which seems most warrented is that administrative responsibilities weigh so heavily on those who share administrative and supervisory responsibilities that the supervisory function is reduced substantially. The relationship between function and size of the district may be no greater than the relationship between function and the effort to define functions for the position in substantial detail. There is a hint in the research that most districts in which such personnel are appointed are growing (hence the need for additional presonnel) and that growth continues faster than additional supervisory or administrative assistance are added. Hence, the first new staff additions become overwhelmed by the administrative implications of the growth.

Even in the schools surveyed for this report, a very small number of supervisory personnel were available in the larger school group. Fewer than 18 per cent of the larger districts (750 to 2499 elementary pupil enrollment) reported non-teaching supervisory personnel other than building principals. This scarcity suggests the need for studies of broad scope to identify personnel needs both in terms of number and function with careful attention being given to the impact of growth in individual districts.

Pupil Personnel Services

Perhaps the most provocative and significant proposals regarding this area of supportive services is to be found in the larger report prepared for the Great Plains region. The pupil personnel services approach is a far more comprehansive approach than any concept of unrelated services in guidance, health, and remedial instruction. Reference should be made to that report.

Data collected from the small district-large district study done for this report indicate extremely low incidence of guidance counselors in elementary schools. The ratio in the samples drawn was 7 to 16 3/14. Projected to the population of schools with fewer than 2500 elementary pupils, these data suggest that approximately 47 counselors are available in the 372 school districts in that population. In the 80 districts classified as larger (750-2499 elementary children enrolled) there were twice as many counselors as in the 292 smaller districts (0-749 elementary pupils enrolled). [This excludes counselors provided under Title I, ESEA, programs.]

Data was not available for health services, social services, or psychological services. School nurses are reported to the State Department but other medical or health services (school physicians, etc.) are not reported. Closer study of this area of services is to be recommended in order to determine which services are most seriously effected by the impact of population density.

Remedial instruction has been included here because of the close relationship between diagnostic activity and remedial provisions. Both Title I and III of ESEA have resulted in a major increase in the amount of

both kinds of activity in Missouri elementary schools. Only time will tell whether these "extra" programs would be continued by local districts if Federal support was withdrawn.

Special provisions for remedial instruction from regular district budgets are virtually non-existent in schools of fewer than 2500 elementary children. The very few that are provided focus on reading disabilities. It was impossible to establish the extent of provision and use of diagnostic services because many districts use non-school resources for some diagnostic work. Other districts may make use of special skills possessed by some classroom teachers and building principles.

Library Services and Instructional Media

Library services under the supervision of a trained librarian are not common at the present time in the schools included in a random sample of "small" and "large" school districts. Of the 142 school districts with under 749 pupils, only four had full-time librarians assigned to the elementary schools. Of the 40 with an enrollment of 750 to 2499 sampled, only three had full time librarians employed at the elementary level. This is not to suggest that districts without librarians are not providing library services to their children. Most elementary schools have principals and teachers who attend, in varying degrees, to the provision of library services to students; however, such provisions would have to be considered minimal.

In outlining an adequate elementary program, however, one would certainly visualize a trained librarian supervising the purchase and distribution of library books and reference materials as well as working with teachers and children. The increasing complexity and availability

of library materials tends to require an individual with specialized training. Financial and man-power limitations may prevent the implementation of the goal of an elementary librarian in each elementary school. A larger district structure or supra-district arrangement would, at least, make the employment of a librarian more feasible from an economic point of view.

Standards provided by the American Library Association[12] in 1960 were sufficiently high that few elementary schools have exceeded them. ALA recommended 6,000 to 10,000 books for schools of between 200-999 enrollment. Schools with 1000 or more pupils should have 10 books per pupil in average daily attendance. It was recommended that not less than 1% of the total per pupil instructional costs be used for the purchase and maintenance of audio-visual materials and equipment. Currently one should probably apply this to some of the new kinds of instructional media.

Instructional media provisions in elementary school, range from conventional motion picture projectors to the more experimental computerized instructional materials. Several years may pass before many of the experimental materials and media are sufficiently evaluated to provide a basis for recommending their wide spread use, particularly in elementary schools. Film-loops (single concept materials) and a few program materials are established; and use of these materials should be incorporated into the classroom's activities systematically as they are made available.

Districts making use of both open-circuit television and those employing closed-circuit units may provide evidence of applicability to situations in the less populated parts of the state. At present, little data is available which completely clarifies the efficiency of instructional television in all the varied situations in which it might be applied.

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[12]American Library Association, Standards for School Libraries, American Library Association, 1960.

Parenthetically, it may be that the richest use is in inservice work with teachers rather than in use with children and youth.

Transportation and Food Services

These auxilliary services are better supported and maintained in districts through out the state than most other services. If one assumes that school districts that provide the services all do so at an acceptable level, the only question of pertinence to this report is, "does the presence or absence of transportation and food services limit school districts' tendencies to organize into efficient units?" The answer to the question is more complex than to fall within the province of this report and is probably better dealt with in the report on finance of Missouri schools.

Summary

A summary of data collected is reported in Table IV. It is apparent that wide differences exist in three of the four areas studied and that the differences for librarians is meaningful. Both large and small districts provide more adequately for the mentally retarded than for other areas of need for which data was available. Even though both groups provided more adequately for the mentally retarded, 19 small school districts failed to provide any special programs.

TABLE IV

Summary of Extra Administrative and Supervisory Assistance, Libraians, Counselors, and Educable Mentally Retarded Teachers in Smaller and Larger School Districts (Elementary Schools) 1966-67

Type of Personnel	District Size Group	Number of Persons Reported	No. of Dist. in Which Reported	Per Cent of All Districts in Sample
Extra Admin. and Superv. Assistance	Small	9	9	6.3
	Large	14	12	30.7
Elementary School Libraians	Small	3	3	1.5
	Large	3	3	7.6
Elementary School Counselors	Small	13	10	5.1
	Large	16 3/14	16	41.2
*Teachers of Educable Mentally Retarded	Small	83	76	38.9
	Large	53	30	90.9

* The large district sample included five school districts in St. Louis County which participate in the program of the Special District which provides all instruction for the various areas of handicapped children. These five districts were <u>not</u> included in the figures reported in this table.

PART III

ELEMENTARY EDUCATION AND SCHOOL DISTRICT ORGANIZATION

It is the purpose of this part of the report to identify the most outstanding relationships between characteristics of sound elementary school programs and the type and size of district organization. Had unlimited time and resources been available for data gathering and processing, a much more definitve study would have been possible. However, there is evidenc of sufficient weight upon which to base some meaningful conclusions. This part will therefore contain three elements: (1) conclusions warranted from the limited date available, (2) suggestions for variations in current organizational structures which offer alternative means of providing better support for elementary school programs, and (3) recommendations for further research.

Conclusions

Based on the limited data that could be assembled, the following conclusions seem warranted:

1. Small schools districts (in reality the vast majority of those enrolling fewer than 2500 elementary children) provide no continuous administrative or supervisory assistance to teachers beyond that available from the building principals and superintendent of schools.

2. The provision of equal educatioanl opportunity for elementary school children will be more costly in most part of rural Missouri.than the more nearly urban portions of the state.

Relationships

If the necessity to provide for development and improvement of curriculum, instruction, and services continues to be as significant as in the past five years, the needs for refined district organization seems clear. The issue is clouded in the more nearly rural portions of Missouri by population sparcity which may make district reorganization a different problem from that experienced by the more densely populated areas. Little or no data exist to indicate even on the basis of limited criteria, the extent to which district reorganization can result in observable pupil gains. In the final analysis, reorganization involves considerable speculation unless it can be shown that reorganization and consequent "improvements" in school programs actually produce observable gains in children.

Without the data noted in the preceeding paragraph, one might question whether reorganization or improved equalization of financial support was more important to correct inadequacies in small school districts. Probably both are essential to the improvement of school services. It is questionable whether rural Missouri districts can ever achieve the efficiency of the more densely populated parts of the state.

The distribution of small school districts indicates a noticable reluctance of rural populations to show particularly strong initiative in reorganization. The data shown in Figure 1, indicates that southeastern and northeastern Missourians are more inclined to reorganize into larger units than other rural populations.

Conceivably intermediate units of larger than single county size could answer some needs in the least densely settled areas. Certainly expanded use of college and university resources for curriculum improvement should occur regardless of basic district size. Cooperative

activities in inservice education involving the State Department of Education, the state colleges, and universities could be increased to fill some of the voids in supervisory (improvement) activity.

Recommended Study

Several questions of importance were beyond the scope of this study. These should be studied. Consequently the following studies and plans are recommended:

1. Study of the measured achievement levels of children above the 66th percentile on ability in school districts according to variation in population density and district enrollment.

2. An intensive study of curriculum practices in elementary schools of varying sizes. This would be a natural follow-up in support of the first study recommended.

3. The development of hypothetical costs in an ideal rural reorganization which would provide services equivalent to those available in the largest 20 per cent of Missouri school districts. On the basis of this study, one might find a more realistic equalization base for the School Foundation Program.

4. The development of a means of encouraging the preparation of specialists in areas for which the demand is substantially greater than the supply through state funds. This might take the form of partial scholarships or loans to students. Librarians, counselors, general curriculum consultants, and teachers of the handicapped seem to be in shortest supply. Such a plan should reward the educator who stays in the state.

5. The provision of a comprehensive educational research unit in the state, probably under the State Department of Education but tied into research capacities of the state universities. This unit would provide for the collection and analysis comprehensive data on all aspects of education in the state.

POSITION PAPER

A DEFENSIBLE EDUCATION PROGRAM

FOR THE SECONDARY SCHOOLS OF MISSOURI

by

Dr. Neil C. Aslin

Professor of Education
University of Missouri
Columbia, Missouri

Prepared for the Missouri Project Office

1968

The Great Plains School District Organization Project
Iowa, Missouri, Nebraska, South Dakota
411 South 13th Street
Lincoln, Nebraska 68508

A DEFENSIBLE EDUCATIONAL PROGRAM FOR THE SECONDARY SCHOOLS OF MISSOURI

INTRODUCTION

That all youth in Missouri are entitled to equal secondary educational opportunities regardless of geographical conditions or socio-economic backgrounds has long been accepted in principle. Certain geographical, organizational, political, and economic "facts of life" however, have made equality of opportunity difficult to achieve in a state as diverse as Missouri.

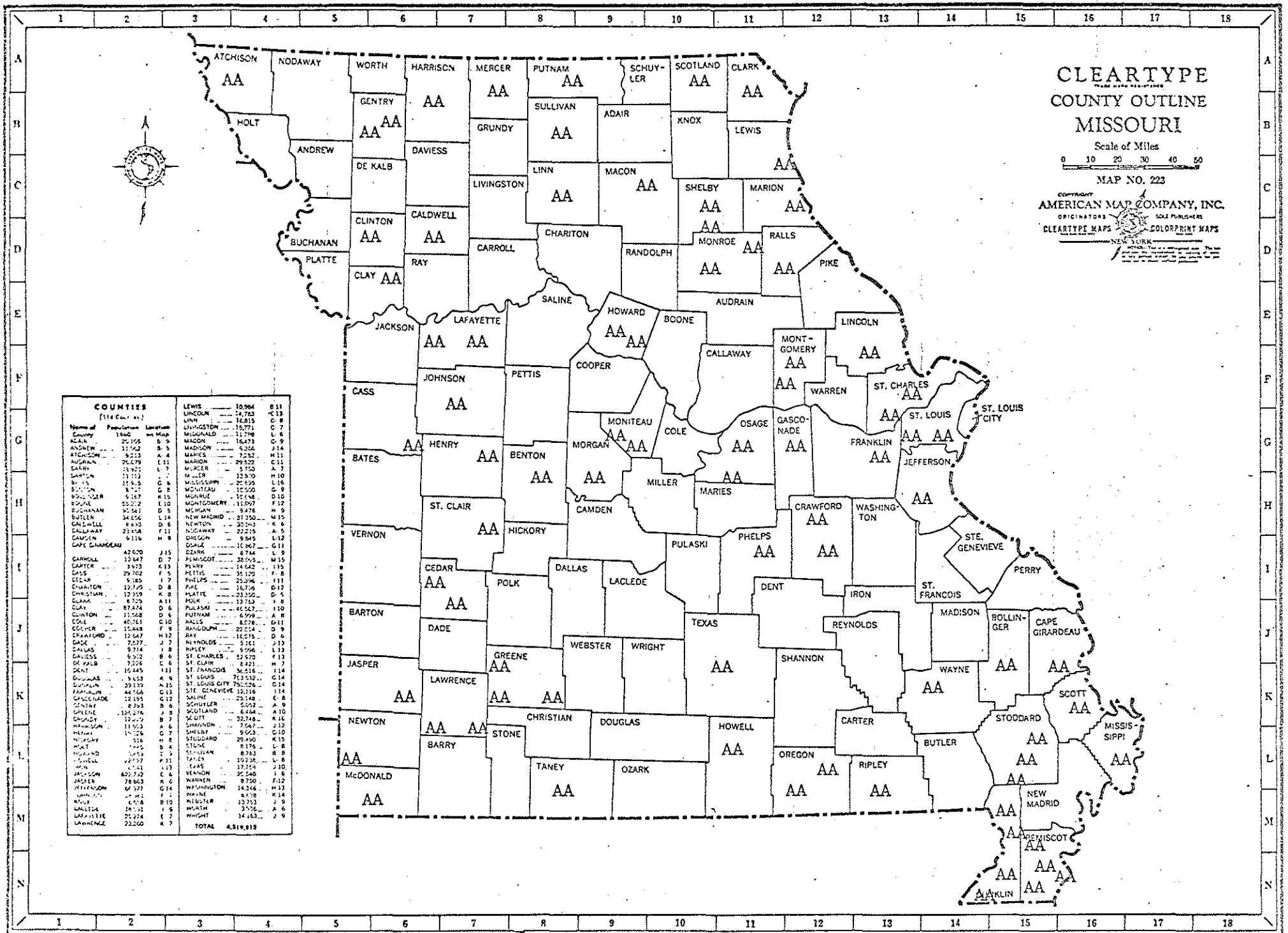
This paper, prepared with the help of doctoral students at the University of Missouri at Columbia, attempts to show the present disparity in secondary educational opportunities and to define what we conceive to be a defensible secondary educational program available to Missouri youth regardless of where they live.

It should be remembered that equal opportunity does not necessarily mean the same opportunities for all youth in all localities.

ASSESSMENT OF EXISTING SECONDARY EDUCATIONAL OPPORTUNITIES IN AAA, AA, AND A SCHOOLS.

Two organizations now evaluate, classify, and/or accredit secondary schools in Missouri - the State Department of Education and the North Central Association of Colleges and Secondary Schools.

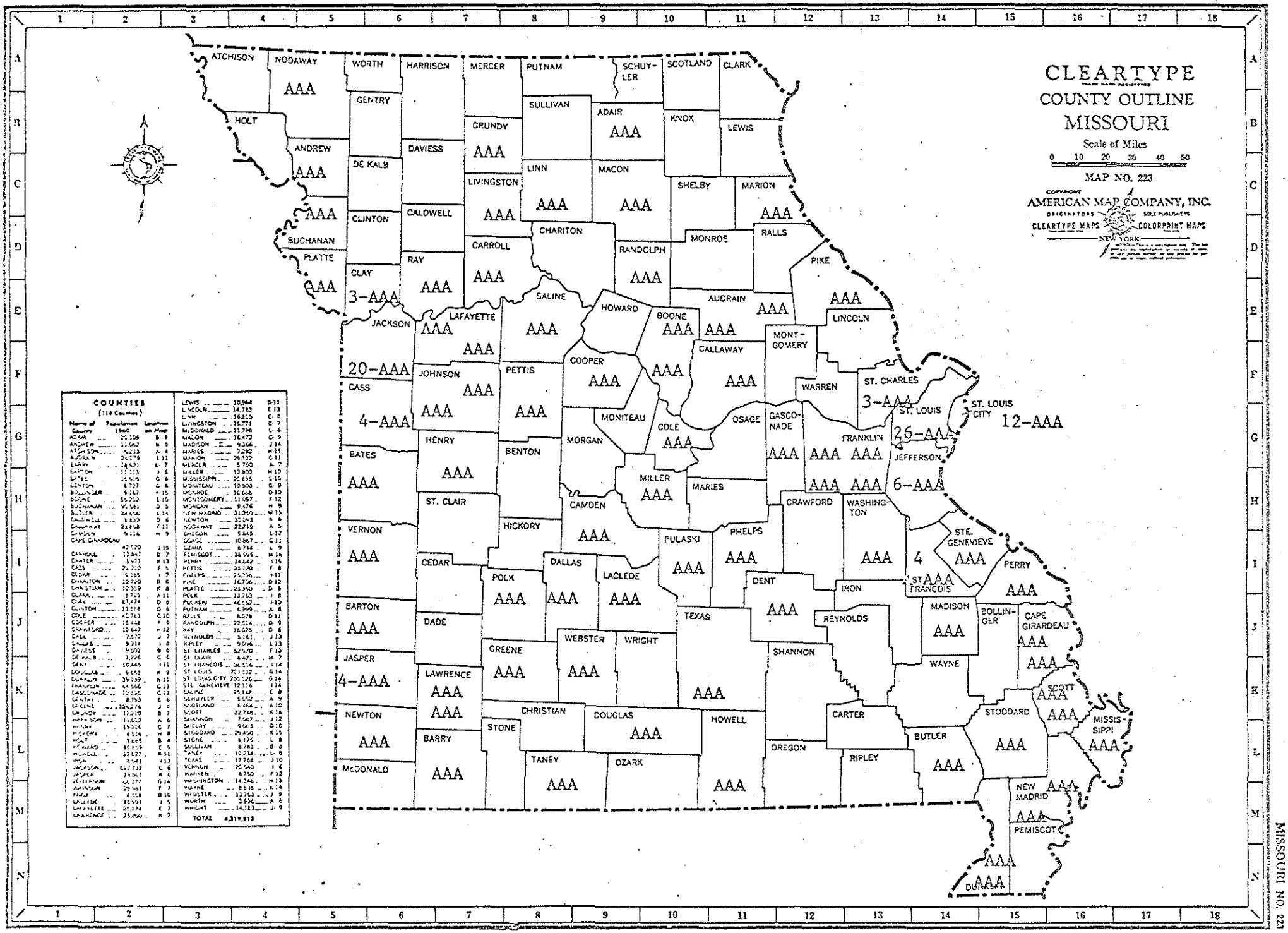
Of the 482 high school districts classified by the State Department of Education in 1966-67, 127 were AAA, 81 AA, 268 A, and 6 unclassified. (See maps on following pages.) The 274 A and unclassified high schools on the average enrolled 123 pupils and were generally located



COUNTIES
(114 Counties)

Name of County	Population 1960	Location on Map
ATCHISON	7,195	B 3
ANDREW	11,562	B 5
ATCHISON	9,233	A 4
AUDRAIN	24,079	E 11
BARRY	18,921	L 7
BARTON	13,113	J 3
BATES	15,965	G 4
BENTON	8,420	G 8
BOLLINGER	9,167	K 15
BOONE	55,202	E 10
BUCHANAN	90,581	D 5
BUTLER	34,656	L 14
CALDWELL	8,630	D 6
CALLAWAY	23,858	F 11
CAMDEN	9,116	H 9
CAPE GIRARDEAU	42,620	J 15
CARROLL	10,847	D 7
CARTER	3,673	K 13
CASS	29,702	F 5
CEDAR	9,185	J 7
CHARITON	12,749	D 8
CHRISTIAN	12,359	K 8
CLARK	8,726	A 11
CLAY	87,474	D 6
CLINTON	15,568	D 6
COLE	40,761	G 10
COOPER	15,448	F 9
CRAWFORD	12,547	H 12
DADE	7,577	J 7
DALLAS	9,314	H 7
DAVIESS	9,512	B 6
DE KALB	7,206	C 6
DENT	10,445	I 13
DOUGLAS	9,658	K 9
DUNKLIN	39,139	N 15
FRANKLIN	44,966	G 13
GASCONADE	12,195	G 12
GENTRY	6,793	B 6
GREENE	124,276	J 8
GRUNDY	12,449	B 7
HARRISON	11,953	A 6
HENRY	19,126	G 7
HICKORY	5,116	H 8
HOLT	7,445	B 4
HOWARD	12,857	E 9
HOWELL	27,797	K 11
IRON	8,543	J 13
JACKSON	629,732	E 6
JASPER	78,863	K 6
JEFFERSON	66,535	G 14
JOHNSON	34,981	F 5
KNOX	6,928	B 10
LACLEDE	19,031	J 9
LAFAYETTE	35,274	E 7
LAWRENCE	23,260	K 7
LEWIS	10,964	B 11
LINCOLN	14,763	C 13
LINN	16,815	C 8
LIVINGSTON	15,771	C 7
McDONALD	11,798	L 6
MACON	16,473	C 9
MADISON	9,206	J 14
MARIES	7,283	H 11
MARION	29,522	C 11
MERCER	3,750	A 7
MILLER	12,870	H 10
MISSISSIPPI	20,595	L 16
MONITEAU	12,550	G 9
MONROE	12,648	D 10
MONTGOMERY	11,097	F 12
MORGAN	9,478	H 9
NEW MADRID	31,350	M 15
NEWTON	30,093	K 6
NODAWAY	22,215	A 5
OREGON	9,845	L 12
OSAGE	10,867	G 11
OZARK	6,744	L 9
PEMISCOT	38,065	M 15
PERRY	14,642	I 15
PETTIS	35,129	F 8
PHELPS	25,396	I 11
PIKE	16,756	D 12
PLATTE	23,350	D 5
POLK	13,763	I 8
PULASKI	46,547	I 10
PUTNAM	6,598	A 8
RALLS	8,578	D 11
RANDOLPH	22,614	D 9
RAY	16,575	D 6
REYNOLDS	5,261	J 13
RIPLEY	9,596	L 13
ST. CHARLES	52,970	F 13
ST. CLAIR	8,421	H 7
ST. FRANCOIS	36,216	I 14
ST. LOUIS	703,532	G 14
ST. LOUIS CITY	750,026	G 14
STE. GENEVIEVE	10,116	I 14
SALINE	29,148	F 8
SCHUYLER	5,052	A 9
SCOTLAND	6,468	A 10
SCOTT	32,748	K 16
SHANNON	7,067	J 12
SHELBY	9,063	C 10
STODDARD	29,490	M 15
STONE	8,176	L 8
SULLIVAN	8,783	B 8
TANEY	10,935	L 8
TEXAS	17,754	J 10
VERNON	20,540	J 6
WARREN	8,250	F 12
WASHINGTON	14,246	H 13
WAYNE	8,618	K 14
WEBSTER	13,753	J 9
WORTH	3,936	A 6
WRIGHT	14,163	J 9
TOTAL	4,319,813	

MISSOURI NO. 223


CLEARTYPE
COUNTY OUTLINE
MISSOURI
Scale of Miles
0 10 20 30 40 50
MAP NO. 223
COPYRIGHT
AMERICAN MAP COMPANY, INC.
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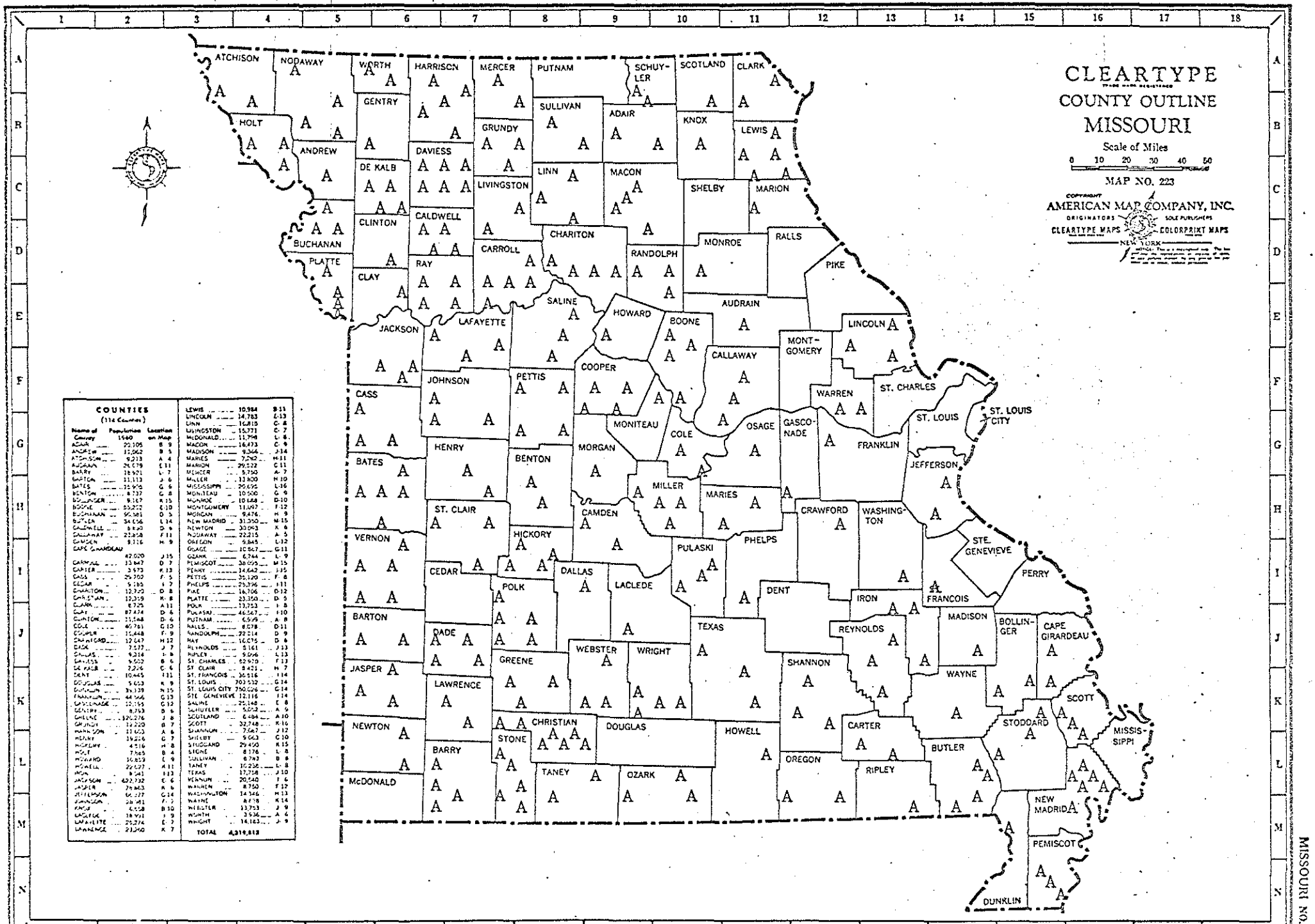
CLEARTYPE MAPS COLORPRINT MAPS
NEW YORK
ATCHISON
NODAWAY
AAA
WORTH
HARRISON
MERCER
PUTNAM
SCHUYLER
SCOTLAND
CLARK
HOLT
GENTRY
SULLIVAN
ADAIR
AAA
KNOX
LEWIS
ANDREW
AAA
DE KALB
DAVIESS
GRUNDY
AAA
LINN
AAA
MACON
AAA
SHELBY
MARION
AAA
AAA
CLINTON
CALDWELL
LIVINGSTON
AAA
CHARITON
MONROE
RALLS
BUCHANAN
CARROLL
AAA
RANDOLPH
AAA
PIKE
PLATTE
AAA
CLAY
3-AAA
RAY
AAA
SALINE
AAA
HOWARD
AUDRAIN
AAA
AAA
JACKSON
LAFAYETTE
AAA
AAA
BOONE
AAA
AAA
LINCOLN
MONT-
GOMERY
20-AAA
JOHNSON
AAA
AAA
PETTIS
AAA
COOPER
AAA
AAA
CALLAWAY
AAA
WARREN
ST. CHARLES
3-AAA
CASS
4-AAA
MONITEAU
COLE
AAA
OSAGE
GASCO-
NADE
AAA
ST. LOUIS
26-AAA
ST. LOUIS
CITY
12-AAA
HENRY
AAA
BENTON
AAA
MORGAN
FRANKLIN
AAA AAA
JEFFERSON
BATES
AAA
MILLER
AAA
MARIES
AAA AAA
6-AAA
ST. CLAIR
CAMDEN
AAA
CRAWFORD
WASHING-
TON
AAA
VERNON
AAA
HICKORY
AAA
PULASKI
AAA
PHELPS
AAA
STE.
GENEVIEVE
AAA
4
ST. FRANCOIS
AAA
PERRY
AAA
CEDAR
DALLAS
AAA
LACLEDE
AAA
POLK
AAA
DENT
AAA
IRON
BARTON
AAA
DADE
TEXAS
REYNOLDS
MADISON
AAA
BOLLIN-
GER
CAPE
GIRARDEAU
AAA
AAA
JASPER
4-AAA
GREENE
AAA
WEBSTER
AAA
WRIGHT
AAA
SHANNON
WAYNE
SCOTT
AAA
AAA
LAWRENCE
AAA
AAA
NEWTON
AAA
CHRISTIAN
STONE
DOUGLAS
AAA
HOWELL
CARTER
STODDARD
AAA
MISSIS-
SIPPI
AAA
BARRY
AAA
OREGON
BUTLER
AAA
McDONALD
AAA
TANEY
AAA
OZARK
AAA
RIPLEY
NEW
MADRID
AAA
AAA
PEMISCOT
AAA
DUNKLIN
AAA
COUNTIES
(114 Counties)
Name of County | Population 1960 | Location on Map
ADAIR 20,558 B 9
ANDREW 11,562 B 5
ATCHISON 6,233 A 4
AUDRAIN 26,779 E 11
BARRY 26,621 L 7
BARTON 12,933 J 6
BATES 16,905 G 6
BENTON 8,737 G 8
BOLLINGER 9,167 K 15
BOONE 55,992 E 10
BUCHANAN 90,581 D 5
BUTLER 34,656 L 14
CALDWELL 8,830 D 6
CALLAWAY 32,868 F 11
CAMDEN 9,226 H 9
CAPE GIRARDEAU 42,970 J 15
CARROLL 12,847 D 7
CARTER 3,973 K 13
CASS 29,339 F 5
CEDAR 9,185 I 7
CHARITON 12,720 D 8
CHRISTIAN 12,359 K 8
CLARK 8,729 A 11
CLAY 87,474 D 6
CLINTON 13,598 D 6
COLE 42,761 G 10
COOPER 15,448 F 9
CRAWFORD 12,647 H 12
DADE 7,577 J 7
DALLAS 9,314 I 8
DAVIESS 9,502 B 6
DE KALB 7,946 C 6
DENT 10,445 I 11
DOUGLAS 9,693 K 9
DUNKLIN 39,139 N 15
FRANKLIN 44,566 G 13
GASCONADE 12,555 G 12
GENTRY 8,753 B 6
GREENE 326,376 J 8
GRUNDY 12,200 B 7
HARRISON 11,653 A 8
HENRY 19,926 C 7
HICKORY 4,516 H 8
HOLT 7,865 B 4
HOWARD 15,859 C 9
HOWELL 22,627 K 11
IRON 8,561 J 13
JACKSON 616,732 E 6
JASPER 76,863 K 6
JEFFERSON 66,377 G 14
JOHNSON 29,981 F 7
KNOX 4,558 B 10
LACLEDE 18,901 J 9
LAFAYETTE 25,276 E 7
LAWRENCE 23,200 K 7
LEWIS 10,964 B 11
LINCOLN 14,783 E 13
LINN 16,215 C 8
LIVINGSTON 15,771 C 7
McDONALD 13,798 L 6
MACON 16,493 C 9
MADISON 9,266 J 14
MARIES 7,282 H 11
MARION 29,122 C 11
MERCER 3,750 A 7
MILLER 13,890 H 10
MISSISSIPPI 20,655 L 16
MONITEAU 10,500 G 9
MONROE 10,648 D 10
MONTGOMERY 11,057 F 12
MORGAN 9,476 H 9
NEW MADRID 31,350 M 15
NEWTON 32,543 K 6
NODAWAY 22,215 A 5
OREGON 5,845 L 12
OSAGE 10,867 G 11
OZARK 6,744 L 9
PEMISCOT 38,095 M 16
PERRY 14,642 I 15
PETTIS 35,129 F 8
PHELPS 25,396 H 11
PIKE 16,756 D 12
PLATTE 33,350 D 5
POLK 18,763 J 8
PULASKI 40,167 H 10
PUTNAM 6,399 A 8
RALLS 8,278 D 11
RANDOLPH 20,614 D 9
RAY 19,075 D 6
REYNOLDS 5,161 J 13
RIPLEY 9,016 L 13
ST. CHARLES 52,570 F 13
ST. CLAIR 8,421 H 7
ST. FRANCOIS 34,516 I 14
ST. LOUIS 703,532 G 14
ST. LOUIS CITY 750,026 G 15
STE. GENEVIEVE 12,116 I 14
SALINE 25,848 E 9
SCHUYLER 5,552 A 9
SCOTLAND 6,484 A 10
SCOTT 32,748 L 16
SHANNON 7,047 J 12
SHELBY 9,063 C 10
STODDARD 29,490 K 15
STONE 8,176 L 8
SULLIVAN 8,783 B 8
TANEY 10,238 L 8
TEXAS 17,756 J 10
VERNON 20,540 J 6
WARREN 8,750 F 12
WASHINGTON 14,246 H 13
WAYNE 8,638 K 14
WEBSTER 13,753 J 9
WORTH 3,936 A 6
WRIGHT 14,183 J 9
TOTAL 4,319,813
MISSOURI NO. 223



COUNTIES
(114 Counties)

Name of County	Population 1960	Location on Map
ADAIR	20,105	B 9
ANDREW	11,062	B 5
ATCHISON	9,213	A 4
AUDRAIN	24,679	E 11
BARRY	18,921	L 7
BARTON	11,113	J 6
BATES	15,956	G 6
BENTON	8,737	G 8
BOLLINGER	9,167	K 15
BOONE	55,252	E 10
BUCHANAN	95,581	D 5
BUTLER	34,056	L 14
CALDWELL	8,690	D 6
CALLAWAY	23,858	F 11
CAMDEN	8,116	H 9
CAPE GIRARDEAU	42,020	J 15
CARROLL	10,847	D 7
CARTER	3,973	K 13
CASS	29,702	F 5
CEDAR	9,185	J 7
CHARITON	12,370	D 8
CHRISTIAN	12,319	K 8
CLARK	8,725	A 11
CLAY	87,474	D 6
CLINTON	13,568	D 6
COLE	46,781	E 10
COOPER	15,648	F 9
CRAWFORD	12,547	H 12
DADE	7,577	J 7
DALLAS	9,314	J 8
DAVIESS	9,902	B 6
DE KALB	7,256	C 6
DENT	10,465	I 11
DOUGLAS	9,053	K 9
DUNKLIN	31,139	N 15
FRANKLIN	44,966	G 12
GASCONADE	10,155	G 12
GENTRY	8,763	B 6
GREENE	126,276	J 8
GRUNDY	12,720	B 7
HARRISON	11,653	B 6
HENRY	19,216	G 7
HICKORY	4,516	H 8
HOLT	7,965	B 4
HOWARD	16,659	E 9
HOWELL	29,127	L 11
IRON	8,141	I 13
JACKSON	622,732	F 6
JASPER	79,863	K 6
JEFFERSON	66,237	G 14
JOHNSON	28,981	F 7
KNOX	6,458	B 10
LACLEDE	18,951	I 9
LAFAYETTE	29,274	E 7
LAWRENCE	21,940	K 7
LEWIS	10,984	B 11
LINCOLN	14,783	E 13
LINN	16,815	C 8
LIVINGSTON	15,771	C 7
McDONALD	11,794	L 4
MACON	16,473	C 9
MADISON	9,366	J 14
MARIES	7,262	H 11
MARION	29,532	C 11
MERCER	5,750	A 7
MILLER	13,800	H 10
MISSISSIPPI	20,695	L 16
MONITEAU	10,500	G 9
MONROE	10,668	D 10
MONTGOMERY	11,097	F 12
MORGAN	9,476	H 9
NEW MADRID	31,350	M 15
NEWTON	33,093	K 6
NODAWAY	22,215	A 5
OREGON	9,845	L 12
OSAGE	10,867	G 11
OZARK	6,744	L 9
PEMISCOT	38,095	M 15
PERRY	14,642	I 13
PETTIS	35,120	F 8
PHELPS	29,396	I 11
PIKE	16,706	D 12
PLATTE	23,350	D 5
POLK	13,753	I 8
PULASKI	46,567	I 10
PUTNAM	6,949	A 8
RALLS	8,078	D 11
RANDOLPH	22,214	D 9
RAY	16,014	D 6
REYNOLDS	5,161	J 13
RIPLEY	9,096	L 13
ST. CHARLES	52,970	F 13
ST. CLAIR	8,421	H 7
ST. FRANCOIS	30,516	I 14
ST. LOUIS	703,532	G 14
ST. LOUIS CITY	750,026	G 14
STE. GENEVIEVE	12,116	I 14
SALINE	25,748	E 8
SCHUYLER	5,052	A 9
SCOTLAND	6,484	A 10
SCOTT	32,748	K 16
SHANNON	7,562	J 12
SHELBY	9,063	C 10
STODDARD	29,400	K 15
STONE	8,176	L 8
SULLIVAN	8,793	B 8
TANEY	10,236	L 8
TEXAS	17,758	J 10
VERNON	20,540	F 6
WARREN	8,750	F 13
WASHINGTON	14,346	H 13
WAYNE	8,658	K 14
WEBSTER	13,753	J 9
WORTH	3,936	A 6
WRIGHT	14,183	J 9
TOTAL	4,319,813	

MISSOURI NO. 223

in the more sparcely populated areas of Missouri. The average number of units of credit offered secondary school students in schools was 39 as compared to 76 in AAA schools.

As noted in the foregoing map, A schools tend to be concentrated in the areas of low population and/or low assessed valuation. In 1967, 94 of the A and unclassified high schools enrolled fewer than 100 students. These schools had a very limited course offering.

The average training of teachers in AAA schools was 160.4 college hours as compared with 146.6 for teachers in A schools. The salaries of the 28,170 teachers in AAA schools in 1966-67 averaged $6,555 as compared with $5,000 for the 6093 teachers in A schools.

In a 1965 study by Hobbs at the University of Missouri in Columbia, we find the following statements: "The problem of relationship between quality of instruction and size of school is primarily a problem of rural areas." Hobbs further hypothesizes that the quality of a school program is affected by three factors: 1) the scope (or breadth) of the school program, 2) the effectiveness of the school administration, and 3) the quantity and quality of the teaching staff.

It is quite evident that secondary schools classified as A and U are small schools, (94 of them enroll less than 100 pupils) that they have limited curriculum offering, that the levels of training and experience of their principals are lower than other schools and their teachers have less specialized training in the areas in which they teach.

Hobbs in the study mentioned above, concludes as follows: "teachers in larger schools teach fewer different subjects, are more experienced and suffer less turnover." Hobbs further reports an Iowa study

indicating that high schools over 400 enrollments averaged 51 units of credit offering, while schools of less than 200 students offered only 31 units of high school credit. It was further reported that in high schools enrolling over 400 pupils, 58% of the teachers were teaching only in their major field while only 37% of the teachers in schools enrolling less than 200 pupils taught only in their major field. In training salaries and tenure, the teachers in larger schools hold an advantage over the smaller schools.

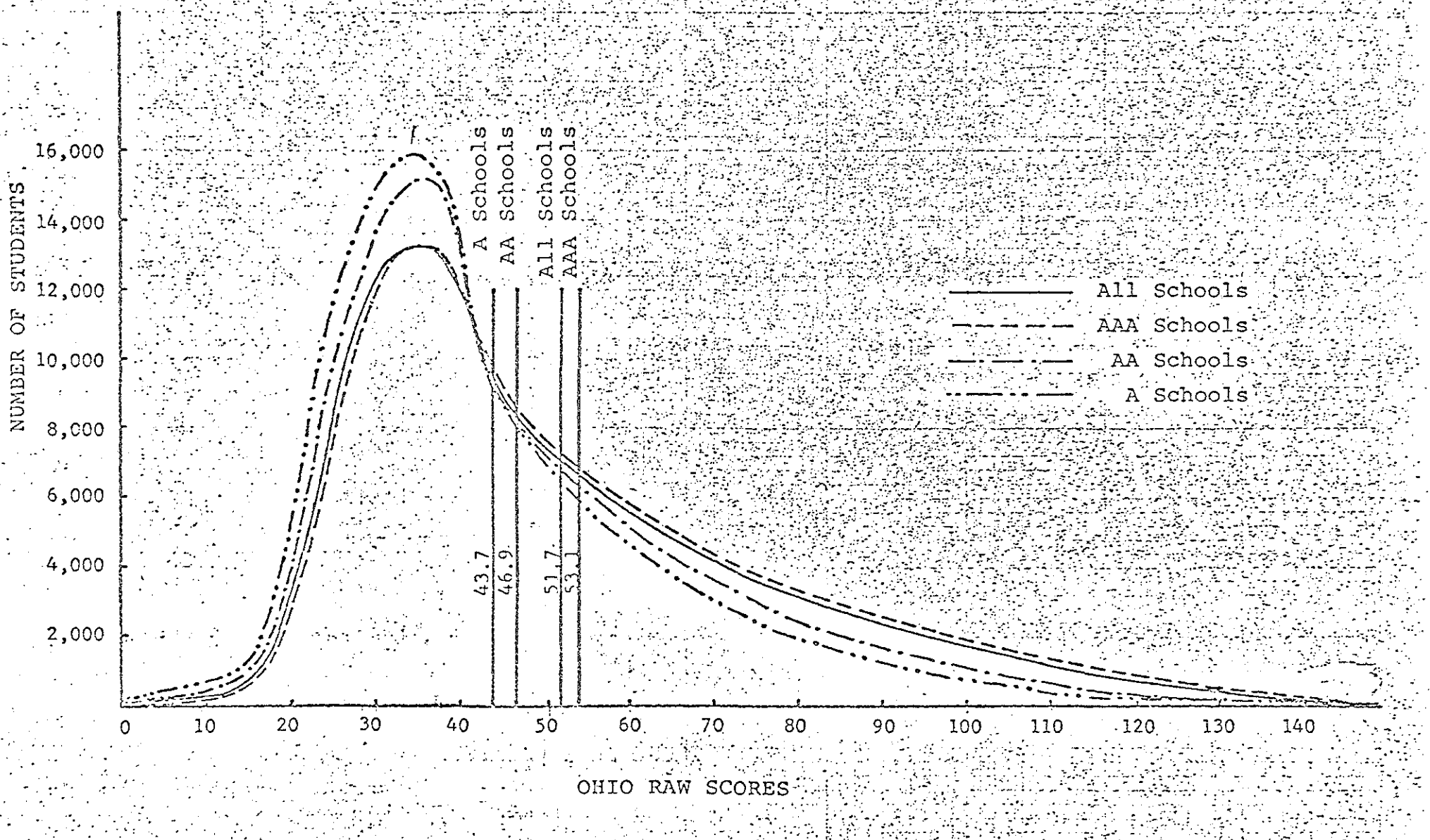
WHAT IS DEFENSIBLE BREADTH IN SECONDARY SCHOOLS OF MISSOURI?

Desirable program breadth must of necessity depend on the needs of the students and the societal demands of the communities in which these students will ultimately reside. It is assumed that all public secondary schools in Missouri will enroll students with wide varieties of abilities, interests, and needs and that these students will not all permanently reside in the communities in which they now live. In this context, it is believed that a defensible minimum secondary school program can be defined. This program must be broad enough to provide knowledge, understanding and growth experiences in vocations, health, citizenship, family living, consumer education, aesthetic appreciation, leisure activity, science, social science, mathematics and communication. Every pupil should have the opportunity to pursue a program to meet his needs. This makes program breadth a necessity in each public secondary school in this state.

The following graph of Ohio Psychological Examination scores of Missouri high school students shows that the ability range of students

OHIO PSYCHOLOGICAL EXAMINATION - FORM 24 1965-66

Distribution by School Classification Adjusted to an Equal Base



in A schools is similar to the range in larger AAA schools. This would seem to provide some evidence that the need for program breadth is not limited to the larger schools.

In the various curriculum areas, the following offerings are recommended as defensible minimum programs for four-year secondary schools in Missouri.

Mathematics	Unit
Functional Mathematics	1
Terminal Mathematics	1
Algebra (basic)	1
Algebra (advanced)	1
Geometry (plane, solid, and coordinated)	1
Trigonometry	½
Total	5½

*See, Appendix A

Foreign Language	Unit
Four year sequence of one foreign language	4
Total	4

*See, Appendix B

Business Education	Unit
Basic Business	1
Typewriting	1
Shorthand	1
Clerical or Office Practice	1-2
Bookkeeping	1
Total	5 or 6

(In cooperation with distributive education or directly under the auspices of the business education departments, the vocational aspects of this area should be emphasized through actual apprenticeships in office situations.)

*See, Appendix C

Industrial Arts

Basic Industrial Arts I (General Shop). . 7-8 grades

(To include exploratory experiences in the following areas: woods, metals, electricity, drafting, power machanics, plastics, graphic arts, and industrial crafts.)

Basic Technical Arts II . . . . . 1 Unit
(To include basic technical general experiences in drafting, general woods, general metals, and basic electricity.)

Industrial Arts III . . . . . 1 Unit
(To include advanced technical experiences in advanced drawing, wood machine technology, metal machining technology, and electronics.)

*See, Appendix D. Total 2 or 3 Units

Vocational Education

With the development of basic pre-vocational skill subjects in business education, industrial arts, etc. and the development of more sophisticated vocational-technical programs in Junior Colleges and other post high school institutions, the vocational functions of the secondary school is less than clear. In spite of this state of flux, a defensible secondary school program should superimpose on the basic skills courses, opportunities for specific occupational training in at least four of the following five areas:

Business and Office Occupations
Trades
Technical Work
Agriculture
Home Economics
Distributive Occupations

*See, Appendix E

Science	Unit
Physical Science	1
General Biology	1
Chemistry	1
Physics	1
At least one specialized or advanced science	1
Total	5

*See, Appendix F

Social Studies	Unit
American Studies	1
Cultures of the World	2
Problems of the Modern World	1
At least two electives taken from the following: Geography, Inter-	

national Relations, Social Psychology, Economics (Consumer), Marriage and Family.	2
Total	6

*See, Appendix G

Communication Skills	Unit
Language Arts I	1
Language Arts II.	1
Language Arts III	1
Language Arts IV.	1
Remedial English.	1
Journalism.	1
Fundamentals of Speech.	½
Total	6½

*See, Appendix H

Health and Physical Education	Unit
Health.	1
Physical Education.	1
Total	2

Art and Music	Unit
Art	2
Music (Theory, Vocal and Instrumental). .	3
Total	5

The development of humanities courses including music, art, and literature is strongly urged.

Home Economics	Unit
Home Living	2

This is in addition to the specific vocationally oriented course or courses mentioned in the section under vocational education.

The above minimum offering would require a curricular program of 50 or more units of credit. With necessary and desirable elective courses appropriate because of the peculiar needs and interests of pupils in individual schools, a minimum course offering in excess of 50 units of credit will probably be necessary. For instance, no course in agriculture is listed as part of a minimum requirement because it is thought

this area is not appropriate for all schools but certainly it is appropriate for many schools located in rural areas. Similarly, no advanced placement courses in mathematics and science are listed but certainly desirable in many schools.

CONCLUSION

It is evident that the 94 high schools in Missouri enrolling less than 100 students could not efficiently and effectively offer the minimum program described above. Of the present 355 AA, A, and Unclassified high schools in Missouri, only 65 offer as many as 50 units of high school credit. The median tenure of principals and teachers in AAA schools is greater than A schools. The level of training teachers in AAA schools is higher and salaries are more adequate. The course offering in A schools is approximately one-half of that in AAA and NCA approved schools. The assignment of teachers to courses outside their major fields of preparation is much more prevalent in A schools.

Again referring to Hobb's study of secondary schools in Iowa, he used the following method of assessing school adequacy.

I. Scope of Program

   a. Breadth of curriculum - the total number of high school units actually taught in one year.
   b. Curriculum waivers (alternations. This is a negative measure.
   c. Specific courses or programs to meet the peculiar needs of the students and the community (special education, vocational education, adult education, etc.)

II. Teaching Staff

   a. Percent of teachers having no degree, the bachelor's degree and master's degree.
   b. Teacher specialization - number of different areas each individual teacher is assigned.

c. Number of teachers with at least 30 hours of college credit in each area assigned.
d. Teacher tenure - average length of employment in this district.
e. Staff - teacher-pupil ratio of other specialists such as guidance counselors, administrators, etc.
f. Teacher salaries

III. Economic Base

a. Property valuation per student enrolled.
b. District tax base.
c. Cost per pupil or expenditure per pupil.

IV. Student Population

a. Total enrollment.

On most of these measures the small high school suffers in comparison with the larger schools in Missouri. Secondary schools, like business, in order to efficiently and effectively meet the demands of today's mobile population and complex society must be adequate in both size and resources.

NEIL C. ASLIN

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APPENDIX A

Alspaugh, John W., A Survey of Secondary Mathematics in Missouri, unpublished dissertation, University of Missouri, 1965.

The sample of fifty schools consisted of fifteen AAA schools, eight AA schools and twenty-seven A schools. This sampling represented approximately ten percent of the schools.

100% of the AAA schools, 87% of the AA, 93% of the A schools, (94% of the combined schools) taught Functional Mathematics I. Functional Mathematics I is often called "General Mathematics" of "General Mathematics I". The course was generally considered a remedial course for students at eh ninth grade level. This course consisted primarily of basic and common social applications of arithmetic regularly encountered by the average person. 75% or more of the above schools used texts that included the follwing topics. Addition and subtraction, multiplication and division of natural numbers; order of fractions in terms of size, changing fractions to higher and lower terms, changing mixed numbers to improper fractions and conversely, multiplication and division of fractions, addition and subtraction of fractions; changing decimals to fractions and fractions to decimals, ordering decimals by size, addition and subtraction, multiplication and division of fractions; changing percents to fractions and conversely,

changing percents to decimals and conversely, finding a percent of a number, finding what percent one number is of another, finding a number when you know a percent of it; use of literal numbers, formulas; measuring line segments, perpendicular lines, paralles; types of angles, measuring angles, angles of a triangle, bisection of an angle; types of traingles, perimeter of a triangle, scale drawings; circumference and diameter of a circle, area of circles; perimeter of common plane figures, area of common plane figures, kinds of solid figures, surface area of solids, volume of solids; ratio; bar graphs, line graphs, circle graphs; checking accounts and banking, interest, installment loans and buying, budgets, business transactions, insurance, taxes, common units of measure.

33% of the AAA schools, 0% of the AA, and 4% of the A schools, (12% of the combined schools) taught Functional Mathematics II. Functional Mathematics II was described as a one-unit course generally taken by students at the tenth grade level. The content of Functional Mathematics II was similar to, and in some instances a duplication of, the content of Functional Mathematics I. 75% or more of the 12% of the schools offering Functional Mathematics II used texts that included the same topics as Functional Mathematics I.

20% of the AAA schools, 12% of the AA, and 7%

of the A schools, (12% of the combined schools), taught Terminal Mathematics. Terminal Mathematics, also referred to as "Refresher Arithmetic," was generally taken by students at the eleventh or twelfth grade level who were weak in basic arithmetic skills. The course was a half-unit course in two-thirds of the schools and a one-unit course in the other one-third of the schools in which it was offered. Disagreement exists as to the nature of this course. Topics included in one interpretation follow. addition and subtraction, multiplication and division of natural numbers; order of fractions in terms of size, changing fractions to higher and lower terms, changing mixed numbers to improper fractions and conversely, multiplication and division, addition and subtraction of fractions; changing decimals to fractions and fractions to decimals, ordering decimals by size, addition and subtraction, multiplication and division of decimals; changing percents to fractions and conversely, changing percents to decimals and conversely, finding a percent of a number, finding what percent one number is of another, finding a number when you know a percent of it; use of literal numbers, formulas, square root; measuring line segments, construction of line segments of a given length with a compass and straight edge, bisection of a line segment, perpendicular lines, construction of perpendicular lines, parallel lines, construction

of parallel lines; types of angles, measuring angles, angles of a triangle, construction of angles with a straight edge and compass, bisection of an angle; types of traingles, construction of triangles, perimeter of a triangle, pythagorean theorem; construction of circles, circumference and diameter of a circle, circles in designs, area of circles; perimeters of common plane figures, areas of common plane figures, kinds of solids, volumes of solids; ratio, proportion; bar graphs, line graphs, circle graphs; money orders, checking accounts and banking, common units of measure, business transactions, receipts, insurance, interest, installment loans and buying, budgets, taxes, latitude and longitude. Much of the content represented is a repetition of topics considered in Functional Mathematics I and Functional Mathematics II.

Contrasted to this interpretation of Terminal Mathematics is the interpretation which could more appropriately be termed a combined second-year algebra and trigonometry course. Topics included in this interpretation follow. Introduction to sets: sets, intersection and union of sets; properties of the four basic operations: commutative laws, associative laws, distributive law, closure, identities, inverses; operations with: signed numbers, polynomials and monomials, polynomial fractions; relations and functions: relations, functions, range and domain of

a function; equations and inequalities: algebraic solution of linear equations, algebraic solution of linear inequalities, algebraic solution of systems of two and three linear equations, graphical solution of systems of two linear equations; Cartesian co-ordinate system and graphs: graphs of linear equations, graphs of systems of linear equations, graphs of families of lines, graphs of parallel and perpendicular lines, graphs of linear inequalities, distance between two points in the plane, slope intercept form of a line; exponents: positive and negative integer exponents, the zero exponent, fractional exponents; special products and factoring: use of the distributive law in factoring, factoring trinomials of the form $ax^2 + bx + c$, product of two binomials, factoring the difference of two squares, factoring the sum and difference of two cubes; radicals: simplification of radicals, operations with radicals; higher degree equations: remainder theorem, factor theorem, synthetic division; variation: direct variation, inverse variation; exponential functions and logarithms: exponential functions, logarithmic functions, computation with logarithms, logarithms with base other than ten; trigonometry; trigonometric functions, relationships among the trigonometric functions, values of the trigonometric functions for special angles, radian measure, graphs of the trigonometric functions, laws of sines and cosines, inverse trigonometric functions,

logarithms of the trigonometric functions, sine, cosine and tangent of the sum and difference of two angles, double angle and half angle formulas, trigonometric equations and identities.

100% of the AAA schools, 100% of the AA, 93% of the A schools, (96% of the combined schools) taught Algebra I. Algebra I was a one-unit course generally taken by students at the ninth grade level or at the tenth grade level following Functional Mathematics I. The above schools used texts that included the following topics. Introduction to sets, subsets, intersection and union of sets; commutative laws, associative laws, distributive laws, closure, identities and inverses; place value, scientific notation, exact and approximate numbers, rational and irrational numbers, modular arithmetic; the four basic operations on signed numbers, the number line, absolute value; formulas for areas and volumes, use of formulas to solve written problems; integer coefficients and constants, fractional coefficients and constants, parentheses, a variable in the denominator, one radical of index two; open sentences and solution sets; algebraic solution of linear inequalities in one variable, graphical solution of linear inequalities in one variable, graphical solution of linear inequalities in two variables; positive integer exponents, the zero exponent, negative integer exponents, fractional exponents; the four basic

operations on monomials and polynomials, degree of a polynomial, the four basic operations on fractions involving integers, monomials and polynomials, reducing fractions to lower terms, the three signs of a fraction, changing mixed numbers to fractions and conversely, comples fractions; ordered pairs and points of a plane, graphs of linear equations, graphs of linear inequalities, slope-intercept form of a line, graphs of compound equations and inequalities, graphs of quadratic equations; relations, functions, range and domain of a function; graphical solution of systems of two linear equations, algebraic solution of systems of two linear equations, consistent, inconsistent, dependent and independent systems of equations, systems of equations with more than two variables, graphical solution of systems of two linear inequalities; use of the distributive law in factoring, factoring trinomials of the form $ax^2 + bx + c$, product of the two binomials, factoring the difference of two squares, factoring polynomials of degree greater than two; square root of integers and decimals, simplifying radicals of index two, the four basic operations on radicals of index two, rationalizing the denominator of radicals of index two, rationalizing the denominator of radicals of index two, radicals of index greater than two; solutions of quadratic equations by factoring, solution of quadratic equations by completing the square, derivation of the

quadratic formula, use of the quadratic formula, algebraic solution of quadratic inequalities, graphical solution of quadratic inequalities; ratio and proportion, direct variation, inverse variation, power variation, joint variation; statistical graphs, mean, median and mode, range and variability; angles and triangles, numberical trigonometry.

100% of the AAA schools, 100% of the AA, 89% of the A schools, (94% of the combined schools) taught Algebra II. Algebra II was normally an eleventh grade course which followed Algebra I and Geometry. 100% of the AA schools, 93% of the AA schools, and 57% of the A schools allowed one unit of credit for the course. When the course was considered a half-unit course, it was often followed by a half-unit course in trigonometry. Trigonometry was sometimes integrated with the algebra course. Texts used in the schools included the following topics. Introduction to sets, subsets, intersection and union of sets; natural numbers, integers, rational numbers, irrational numbers, real numbers, the number line, absolute value, modula arithmetic; commutative law, associative law, distributive law, closure, identities, inverses; signed sumbers, polynomials and monomials, polynomial fractions; relations, functions, range and domain of a function, formulas; algebraic solution of linear equations, algebraic solution of linear inequalities, algebraic solution of systems of two linear

equations, algebraic solution of systems of three linear equations, algebraic solution of quadratic equations, graphical solution of systems of two linear equations, graphical solution of quadratic equations, solution of equations of degree greater than two, properties of the roots of quadratic equations, solution of quadratic inequalities, systems of equations involving quadratics; graphs of linear equations, graphs of quadratic equations, graphs of systems of linear equations, graphs of families of lines, graphs of parallel and perpendicular lines, graphs of quadratic inequalities, parabolas, circles, ellipses and hyperbolas, distance formula, slope-intercept form of a line, graphs in three space; positive and negative integer exponents, the zero exponent, fractional exponents; use of the distributive law in factoring, factoring trinomials of the form $ax^2 + bx + c$, product of two binomials, factoring the difference of two squares, factoring the sum or difference of two cubes; exponential functions, logarithmic functions, computation with logarithms, logarithms to bases other than ten; the trigonometric functions, relationships among the trigonometric functions, values of the trigonometric functions for special angles, radian measure, graphs of the trigonometric functions, laws of sines and cosines, inverse trigonometric functions, logarithms of the trigonometric functions, sine, cosine and tangent of the sum

and difference of two angles, double-angle and half-angle formulas, trigonometric identities and equations; the imaginary unit i, algebraic operation with complex numbers, complex roots of equations, graphical representation of complex numbers, graphical addition and subtraction of complex numbers, trigonometric form of complex numbers, operation with complex numbers in trigonometric form; introduction of vectors, components of vectors, addition and subtraction of vectors; matrices, determinants, solution of systems of two linear equations with determinants, solution of systems of three linear equations with determinents; introduction to slide rule; sequences, series, arithmetic and geometric sequences, arithmetic and geometric series, sum of arithmetic and geometric series, limit of a sequence, sum of an infinite series; mathematical induction; binomial theorem; rational and proportion, direct and inverse variation, joint variation; simplification of radicals, operations with radicals of index two and of index greater than two, solution of equations involving radicals; mean, standard deviation, correlation, permutations, combinations and probability; average rate of change, derivatives, slope of a curve, maximum and minimum values; remainder theorem, factor theorem, synthetic division, graphical solution of higher degree equations, Descartes' rule of signs, algebraic

solution of higher degree equations.

100% of the AAA schools, 100% of the AA, 67% of the A schools, (82% of the combined schools) taught geometry. Geometry, often titled "Plane Geometry" or "Plane and Solid Geometry", was a one-unit course usually taught at the tenth grade level following Algebra I. There was a tendency to integrate plane and solid geometry. When organized in this way, solid geometry was usually a small portion of the course, generally limited to areas and volumes of common solids, where there were two approaches used to integrate the plane and solid geometry. The solid geometry content was: (1) distributed through the course, usually at the end of each major unit, or (2) set up in a separate unit, usually in the latter part of the course. The co-ordinate geometry included with the course was organized to show the relationship between the geometrical concepts studied in the course and the co-ordinate geometry studied in Algebra I, Algebra II and Mathematical Analysis. Texts included the following topics. Points, lines, and planes, sets, real numbers and the number line, equality and inequalities; inductive reasoning, deductive reasoning, if-then statements, definitions in geometry, two column deductive proofs, indirect proofs, axioms and postulates, converse of a theorem, inverse and contrapositive of a theorem; measurement of angles, straight angles, right

angles and perpendicular lines, supplementary, complementary and vertical angles; properties of parallel lines, properties of parallel planes, transversals and angles formed by transversals, the parallel postulate, application of parallel lines in proofs of other theorems, parallelograms and trapezoids; types of triangles, corresponding parts of triangles, proving triangles congruent, application of properties of congruent triangles in proofs of the properties of polygons, Pythagorean theorem, 30-60-90 and 45-45-90 triangles; ratio and proportion, similar triangles, similar polygons; arcs and central angles, inscribed angles, angles formed by secants and tangents, chords or circles, proportions involving chords, secants and tangents, simple properties of the sphere; angle and triangle construction, construction of parallel and perpendicular lines, constructions involving circles, construction by means of loci, intersection of loci; Cartesian co-ordinate system, equations of lines, slope of a line, parallel and perpendicular lines, distance formula, mid-point formula, graphs meeting given conditions, equations and graphs of circles, symmetry; sine, cosine and tangent ratios, applications of the sine, cosine and tangent ratios, trigonometric functions for any angle, laws of sines and cosines; areas of rectangles and parallelograms, areas of triangles and trapezoids, areas of similar triangles, properties of polygons, areas

of regular polygons, areas of similar polygons, the circle as a limiting case of a regular polygon, area of a circle, measure of arcs, sectors and segments of circles; area and volume of prisms, area and volume of pyramids, area and volume of cylinders, area and volume of cones, area and volume of spheres, area and volume of similar solids.

Solid geometry was a half-unit course taught in only one AAA school in the sample. This course was taught at the twelfth grade level.

80% of the AAA schools, 62% of the AA, 48% of the A schools, (60% of the combined schools) taught trigonometry. Trigonometry was a half-unit course taught in 97% of the schools and a one-unit course in the other 3%. As previously mentioned, most AAA and AA schools do not teach this subject as a separate course, but integrate it with either Algebra II or Mathematical Analysis. The topics taught in the course follow. The six trigonometric functions, reciprocal functions, co-functions, tables of natural functions, solution of right triangles, values of the trigonometric functions for special angles; approximate numbers, scientific notations, logarithm functions, common logarithms, logarithms of trigonometric functions, computation with logarithms, interpolation in use of logarithms, use of logarithms in solution of exponential equations, logarithms to bases other than ten; introduction to slide rule;

solution of triangles, solution of isosceles triangles, solution of regular polygons; Cartesian co-ordinate system, positive and negative angles in standard position, signs of the trigonometric functions, functions of angles in any quadrant, functions of negative angles, functions of $(90^\circ \pm \theta)$ and $(270^\circ \pm \theta)$; radians as angular measure, length of arc and radians, linear and angular velocity, areas of sectors and segments of circles, mil measure; graphs of the trigonometric functions, slope of a curve, graphs using radian measure, amplitude and period of a function, graphs of compound functions, line values of the trigonometric functions; reciprocal relations, quotient relations, Pythagorean relations, identities, trigonometric equations, sine, cosine and tangent of a difference of two angles, functions of twice an angle, functions of half angles, product formulas, sum and difference of two sines or cosines; law of sines, law of cosines, law of tangents, half angle formulas, areas of any triangle, introduction to vectors and their simple applications; principal value of inverse trigonometric functions, graphs of inverse trigonometric functions, identities and equations involving inverse trigonometric functions; imaginary numbers, complex numbers, graphical representation of complex numbers, polar form of complex numbers, products and quotient of complex numbers in polar form, DeMoivre's theorem,

trigonometric and exponential series, hyperbolic functions; introduction to spherical trigonometry.

67% of the AAA schools, 75% of the AA, 7% of the A schools, (36% of the combine schools) taught Mathematical Analysis. Other titles designated for the course were "Analytics Mathematics", "Advanced Mathematics", "Senior Mathematics", and "College Algebra and Trigonometry." Mathematical Analysis was a twelfth grade level course for which one-half unit of credit was assigned in 78% of the schools, and one unit was assigned in the remaining 22% of the schools. When Mathematical Analysis was taught as a half-unit course, it generally appeared in the sequence of courses Algebra I, Geometry, Algebra II, Trigonometry and Mathematical Analysis. On the other hand, when Mathematical Analysis was considered a one-unit course, Trigonometry was generally integrated with either Algebra II or Mathematical Analysis or both, and did not appear as a separate course in the stipulated sequence of courses. There was no common core of topics which was included in the course by a large majority of the schools. Topics included in Mathematical Analysis follow. Lines and planes in space, dihedral and polyhedral angles, polyhedrons, prisms and pyramids, cylinders and cones, spheres; Cartesian co-ordinate system, properties of the line in the Cartesian plane, graphs of algebraic functions, loci,

exponential and logarithmic functions, parametric and polar equations, conic sections, range and domain of a function; limits, definition of derivative, derivative formulas for algebraic functions, finding maximum and minimum values using derivatives, second derivatives, differentials, integration of algebraic functions, areas by integration, volumes by integration differentiation of circular functions, inverse curcular function and their derivatives; the trigonometric functions, graphs of the trigonometric functions, relationships among the trigonometric functions, trigonometric identities and equations, functions of the same or difference of two angles, double and half-angle formulas, laws of sines and cosines, inverse trigonometric functions; graphical representation of complex numbers, operations with complex numbers, polar form of complex numbers, multiplication, division and roots of complex numbers in polar form; permutations and combinations, probability, set theory and probability, measures of central tendency and variability, statistical hypotheses, mathematical induction, binomial theorem, determinants, Cramer's rule, addition and multiplication of matrices, inequalities, elementary set theory, arithmetic and geometric sequences (progressions), arithmetic and geometric series; remainder theorem, factor theorem, Decartes' rule of signs, solution of equations of degree greater than two; introductions to

computer programming.

Elementary Functions was taught at the twelfth grade level in two (15%) of the AAA schools. This was a half-unit course in one school and a one-unit course in the other.

Matrix Algebra was a half-unit course in one AAA school in the sample. This course was taught in the twelfth grade.

Alspaugh, John W., "The Extent of 'Modern' Mathematics in the State of Missouri," A Survey of Secondary Mathematics in Missouri, unpublished dissertation, University of Missouri, 1965.

The classification of courses as "modern" or "traditional" depends on the definitions of these terms and the criteria used. To construct an acceptable and workable definition of the term, "modern" mathematics, applicable to all courses is exceedingly difficult. Therefore, criteria were established in order to classify each course as "modern" or "traditional."

The Functional Mathematics I, Functional Mathematics II, and Terminal Mathematics courses consisted primarily of basic arithmetic and social applications of arithmatic with very little or no emphasis on the properties of the number system and the structure of mathematics considered to be characteristic of "modern mathematics." Therefore, these courses were classified as "traditional."

An Algebra I course was classified as "modern" if it emphasized the structure of mathematics and included all of the following concepts: commutative, associative, and distributive properties; sets; inequalities; absolute value; and the number line. Approximately fifty percent of the Algebra I courses taught by the schools in the sample were "modern" according to the above criteria. When the same criteria were applied to Algebra II, about

55% of the Algebra II courses were classified as "modern" courses.

A geometry course was classified as "modern" if it represented an integration of plane, solid, and co-ordinate geometry and if the basic definition employed was structured in terms of points, lines or planes satisfying given conditions. According to these criteria, about seven percent of the geometry courses taught by the schools in the sample were "modern." Since solid geometry as a separate course appeared to be losing its place in the mathematics curriculum, it was classified as a "traditional" course.

The trigonometry course consisted of a common core of content which was included in almost all of the courses so titled in the curricula of schools in the sample. The variation in these courses was primarily in depth of study of the major topics. Curriculum change to so-called "modern mathematics" included a tendency to integrate Trigonometry with Algebra II or Mathematical Analysis depending on the organization of the mathematics program. Trigonometry as a separate subject had under-gone relatively little change in content and organization and therefore was classified as a "traditional" course.

The Mathematical Analysis course was introduced in the secondary mathematics curriculum as a result of the lowering of the grade placement of content previously

considered college mathematics. In the sense that Mathematical Analysis represented a relatively new course, it was classified as a "modern" course. Because Elementary Functions and the Matrix Algebra were relatively new additions to the secondary mathematics curriculum, each was classified as a "modern" course.

Presented in the following table is the percent of schools which taught each mathematics course as a "modern" or "traditional" course. The percents were obtained by multiplying the percent of schools which taught the course, given in another section of this report by the percent of the courses which were previously classified as "modern" or "traditional", respectively.

PERCENT OF SCHOOLS WHICH TAUGHT "MODERN"
OR "TRADITIONAL" COURSES*

Courses	"Modern"	"Traditional"
Functional Mathematics I	0%	94%
Functional Mathematics II	0	12
Terminal Mathematics	0	12
Algebra I	48	48
Algebra II	52	42
Geometry	6	76
Solid Geometry	0	2
Trigonometry	0	60
Mathematical Analysis	36	0
Elementary Functions	4	0
Matrix Algebra	2	0

*Alspaugh

The Missouri Legislature required for high school graduation one unit of mathematics usually to be taken in the ninth grade. It is recommended that this one unit be in general mathematics. This recommendation the legislature felt best served the "needs and interests" of most pupils. The legislature further recommended that those students who were capable of advanced mathematical work be counseled to take algebra at this grade level.[20]

The Legislature recognized the following list of high school mathematics courses as approved: (1) Functional Mathematics I, (2) Functional Mathematics II, (3) Terminal Math, (4) Algebra I, (5) Geometry, (6) Algebra II, (7) Trigonometry, (7) Mathematical Analysis.[21]

The Missouri Legislature in its special standards for high schools (grades nine- twelve) classification and accreditation required that class AAA high schools offer a minimum of 42½ units of credit required (among those 42½ units are 4 units of mathematics. The class AA high schools were required to offer a minimum of 34½

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20 Missouri State Department of Education, The School Administrator Handbook (Publication No. 20-H. Columbia: Kelly Press Inc., (1961), p. 113.

21 Ibid., p. 115.

units of credit of which 3 units were to be mathematics. The Class A high schools were required to offer a minimum of 24½ units of credit of which 2 units were comprised of mathematics. The approved schools were required to offer as a mininum 20½ units of credit of which 2 units consisted of mathematics.[22]

The Missouri State Department of Education has recently published (1967) its mathematics guide for teachers grades seven through twelve. Within this report are recommendations for organization of the mathematics curriculum, as well as for the instructional program.

This report which was meant merely to serve as a guideline in curriculum construction suggested that the mathematics program be designed as a nine course, two-track program. These two tracks consisted of a college bound mathematics sequence designed for grades eight, nine, and twelve. Neither track would be rigid allowing for student movement as vocational interests changed.

It was suggested that for most students the regular mathematics course for grade seven through twelve would be

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[22] Ibid., p. 144-46.

acceptable. This sequence consisted of the college bound course outline which would allow for entry directly into college calculus. The committee members were in agreement that formal study of the calculus should be delayed until college.[23]

For the remaining students there was a sequence of courses consisting of a thru-course basic mathematics sequence. The first two courses in this sequence would be taken at the eight and ninth grade level. The final course would be taken in the twelfth grade and would be a terminal course designed for those students whose educational or vocational plans would not involve more study of mathematics on a formal basis. This program was in no way according to the committee to be construed as a remedial program, or a program for students of low ability only.[24]

No guidelines were constructed for the academically talented this was left to the schools to develop on their own.

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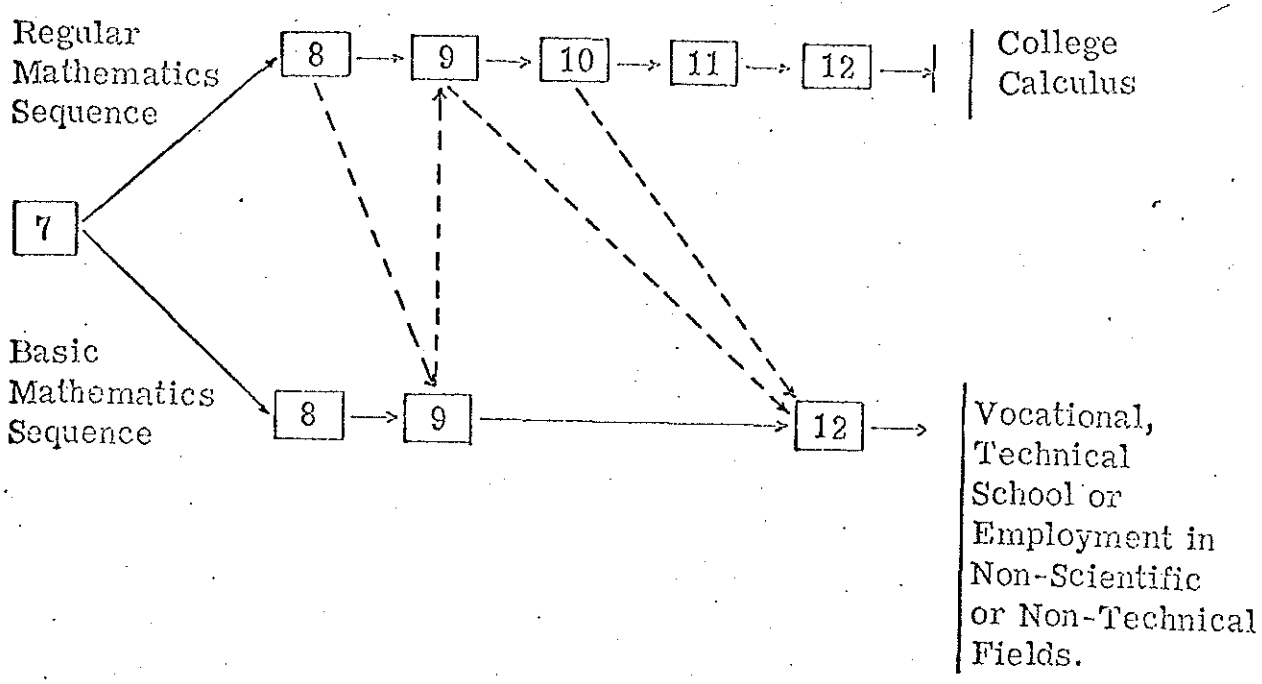
[23] Missouri State Department of Education, Mathetics: A Guide for Teachers Grade 7=I2 (Publication No. I32G. Jefferson City: Missouri State Department of Education, I967), p. 7.

[24] Ibid., p.7.

This organization of the mathematics curriculum was recommended by the Missouri State Department of Education.[25]

Possible Sequential Organization



[25] Ibid., p. 8.

TABLE I

FOREIGN LANGUAGES OFFERED IN MISSOURI HIGH SCHOOLS FROM 1955-56 TO 1965-66
(Does not include Kansas City or St. Louis Schools until 1962-63)

Language	1955-56	1956-57	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63	1963-64	1964-65	1965-66
Chinese I	-	-	-	-	-	-	-	-	-	-	2
Chinese II	-	-	-	-	-	-	-	-	-	-	1
French I	33	41	53	66	77	100	119	136	140	162	175
French II	23	24	33	43	45	61	82	94	110	118	136
French III	4	4	4	4	8	13	24	31	41	40	51
French IV	1		1	1	2	4	8	14	16	22	32
German I	6	6	9	10	51	17	26	32	29	35	42
German II	3	2	4	5	28	18	14	25	25	20	29
German III	-	-	1	-	-	-	4	3	7	3	7
German IV	-	-	-	-	-	-	-	-	1	3	4
Italian	-	-	-	-	-	-	-	-	-	-	1
Latin I	62	79	70	94	70	99	84	99	91	88	86
Latin II	53	43	61	55	57	70	74	73	84	73	71
Latin III	5	5	5	6	5	10	14	18	19	10	19
Latin IV	3	4	5	4	2	4	6	10	8	4	13
Russian I	-	-	-	-	3	3	5	7	9	8	10
Russian II	-	-	-	-	-	2	2	7	7	6	7
Russian III	-	-	-	-	-	-	-	1	2	2	5
Russian IV	-	-	-	-	-	-	-	-	1	2	2
Spanish I	95	88	101	102	132	147	166	157	187	202	204
Spanish II	55	61	52	75	67	111	114	130	139	145	168
Spanish III	2	3	4	5	13	26	25	38	46	49	56
Spanish IV	1	2	1	2	-	3	7	13	18	-	33

IV. CURRENT STATUS OF THE BUSINESS EDUCATION CURRICULUM IN THE STATE OF MISSOURI

The following table is a summary of the number of districts offering business education courses by title during the 1964-65 and 1965-66 school years and the number of pupils enrolled during 1964-65. Data is not included for the high schools maintained by the University of Missouri, Lincoln University or the State Colleges.

BUSINESS EDUCATION[16]

Title of Courses	Number of School Districts Offering		Number of Pupils Enrolled
	64-65	65-66	64-65
Typing I	505	496	45,029
Bookkeeping I	469	473	18,629
Typing II	478	469	30,737
Shorthand	424	440	12,714
Basic Business	290	340	12,959
Secretarial Practice I	318	307	5,315
Clerical Practice I	106	225	4,673
Business Law	107	108	4,632
Business English	68	60	2,183
Office Machines	23	50	1,151
Secretarial Practice II		38	
Advanced Business	24	34	471
Business Mathematics	31	30	1,862
Salesmanship	37	26	996
Retailing	10		311
Clerical Practice II		22	
Bookkeeping II		21	
Supervised Office Experience	2	12	310

[16]Missouri State Department of Education, One Hundred Sixteenth Report of the Public Schools of the State of Missouri, 1965, and One Hundred Seventeenth Report of the Public Schools of the State of Missouri, 1966 (Jefferson City: State Department of Education).

The table below reflects the number of school districts offering vocational distributive education courses during the 1964-65 and 1965-66 school years and the number of pupils enrolled in such programs during 1964-65. Data is not included for high schools maintained by the University of Missouri, Lincoln University or the State Colleges.

VOCATIONAL DISTRIBUTIVE EDUCATION[17]

Title of Courses	Number of School Districts Offering		Number of Pupils Enrolled
	64-65	65-66	64-65
Preparatory Distributive Education	10		668
Salesmanship		19	
Marketing		16	
Merchandising		10	
Management		7	
Cooperative Distributive Education	54		2,056
Cooperative Distributive Education I		64	
Cooperative Distribution Education II		54	

In a well-planned business education curriculum several factors must be taken into consideration. The amount of migration affecting the community, the type and variety of industry, the size of the school enrollment, the professional staff available, and classroom facilities of different schools vary. The business education curriculum in the typical high school should be both vocational and non-vocational in nature, however, local demands by business and industry in a particular community may suggest a need for a vocational oriented program in the school. To meet these challenges a committee assigned to study and

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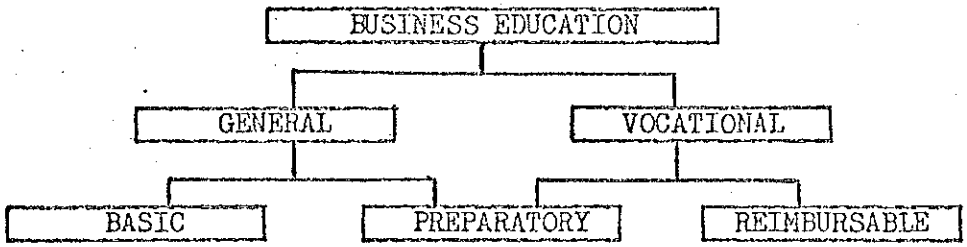
[17] Ibid.

suggest curriculum for business and office education in Missouri recommended the following pattern of organization.[18]



Basic Business	Basic Business	
Typing	Typing	
	Clerical Practice	Clerical Practice
Business English	Business English	
	Shorthand	
	Secretarial Practice	Secretarial Practice
Business Math	Business Math	
Business Law	Business Law	
Bookkeeping	Bookkeeping	Bookkeeping
Advanced Business	Advanced Business	
Economics	Economics	
Data Processing	Data Processing	
	Office Machines	Office Machines
Notehand		
		Special Needs

[18]Missouri State Department of Education, Block-Time Business Education. Business and Office Education Section, Vocational Division (Jefferson City: State Department of Education), p. 12.

V. TRENDS

The findings of a nationwide study conducted by Wanous[20] during the 1962-63 school year were compared with a similar study conducted in 1959 to discover trends in business programs and practices. Some of the more prominent trends follow:

1. There is a decline in the percentage of schools offering major programs in business. The bookkeeping major is slipping at the fastest rate.
2. Combination majors are being developed in many schools. These programs permit students to complete the courses necessary for college entrance and, at the same time, to equip themselves with the training needed to get a job in business.
3. The number of schools requiring skill subjects is on the decline. Social business subjects are increasing in importance.
4. Shorthand, business law, and business English are not as commonly required as in the earlier study.
5. A course in Merchandising is more popularly required now than earlier.
6. A major in selling or merchandising is less frequently offered now than was the case in the earlier study.

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[20] Wanous, op. cit., pp. 32-34.

7. A number of large and medium-sized schools reported the organization of a course in personal typewriting.
8. A number of small schools had added courses in office practice.
9. Economic and general business courses were added to the programs of schools of all sizes.
10. Generally, schools are adding courses rather than dropping shortening, or combining them.
11. About 10 per cent of the schools involved reported that accelerated programs in business had been developed for able students pursuing academic curricula.
12. Only 4 per cent of the schools reporting were including an orientation unit or short course in data processing.

VI. A DEFENSIBLE PROGRAM

Overview

It is assumed that each school should have the opportunity to determine the type of curriculum best suited to its particular situation. If each school is looking to the needs of youth, this motive will give direction not only to the program but also to its administrative and supervisory structure. The structuring of the school program above and beyond mimimum legal requirements should, and usually will, reflect the community's interest in the welfare of its youth.

The expansion and ever increasing complexities of business and industry accentuate the need for additional emphasis on business education in our secondary schools. Since all people are consumers and a very large segment of our population is employed in business as producers, the responsibility of the business education department is twofold: non-vocational (consumer information and use) and vocational, or job training.

Originally the objective was vocational competency--skill training. This is still very important, but much emphasis is now given to the importance of the non-vocational aspects of the general business understanding. This general business concept also includes consumer education which enables persons to become intelligent consumers of the many services offered today.

In planning a business education curriculum for the comprehensive high school for the State of Missouri it is realized that the planning must consider the many small high schools currently existing in the State.

Students in these smaller communities should be provided a program which will not only help them to prepare to meet the business demands of their community, but they should also be provided a program which enable them to fulfill the expectations established for a highly mobile population. As programs are developed it is necessary to keep the needs of the following different segments of students in mind: (1) The migration factor and the trek to the big cities, (2) The trend toward specialization instead of diversification, (3) The student who will terminate his formal education after high school, and (4) The student who will continue into some type of post-secondary school education.

The Junior High School

The junior high school has as its major function the extension of general education, with a mimimum of technical education. It is evident in current literature that the experiences in junior high school should lead increasingly toward some goal that will ultimately be reflected in a chosen specialization.[21] The important implication in this "evolving specialization" concept is that something be begun during the junior high period which is in the realm of general education but increasingly leads toward specialized education. Generally, writers in junior high school education overwhelmingly endorse the general education concept as the major objective.

Two groups of objectives have been identified as business education's contribution to the general education of all youth.

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[21] Roman, op. cit., p. 15.

They are general business education and communication skills objective. The general business education objectives may be broken down and studied in terms of their contribution to personal-business and consumer-business education as related to specific subjects.

BUSINESS SUBJECTS PROPOSED FOR THE COMPREHENSIVE HIGH SCHOOL

Subject	Credit
**1. Basic Business	1
2. Typewriting	1
***3. Shorthand	1
*4. Clerical Practice	1-2
***5. Secretarial Practice	1-2
*6. Bookkeeping	1
7. Advanced Business Principles	½
8. Economics	½
*9. Office Machines	½
10. Business Law	½
11. Salesmanship	½
**12. Vocational Distributive and Cooperative Education	

*A unit on data processing recommended

**Business mathematics may be included depending upon student needs.

***Business English may be included depending upon student needs.

Basic Business: This course should be the first course offered in the business curriculum, and it should be designed to provide the student with an introduction to the business world and help him understand his economic environment.

Typewriting: This is a skill subject which provides basic principles and skills in the operation and use of the typewriter as an instrument for writing.

Shorthand: Shorthand is primarily a vocational subject and should be taught with the objective of developing an employable skill.

Clerical Practice: The content of this course includes broad knowledge and procedures of the modern office in a changing world of business. The important objectives of the course are to develop skills necessary to perform clerical duties at an employable level, to develop a knowledge of common business forms and skill in handling them by hand processes or office machines and other processing devices, and to develop personal qualities and attitudes needed by successful clerical workers. A well-developed typewriting skill is highly recommended for this course since the majority of clerical office jobs require typewriting activity.

Secretarial Practice: The secretarial practice course should include training for vocational competency in shorthand, dictation and transcription, typing, filing, business machines, office procedures, personality development, and means and methods of seeking employment.

Bookkeeping: An understanding of the underlying principles is the chief consideration. Whether hand or machine bookkeeping is practiced, the same fundamentals apply. The greater use of machines in business

does not alter the fact that bookkeeping principles must still be taught. However, some of the more formal processes such as the opening, closing, and adjusting entries might well be eliminated or made optional.

Advanced Business Principles: The contents may vary according to the point of view taken by the school or department, and according to the needs and interests of students in each individual situation. However, the content can generally be summarized under the following topics: how business is organized, owned, and managed; the government's role in regulating business; problems associated with beginning a small business; and careers in business organizations of various sizes.

Economics: Economic activities are an indispensable part of the daily living of everyone. Adequate provision should be made through the curriculum for every student to develop economic literacy, to gain an understanding and appreciation of our economic system, and to become an intelligent consumer of goods and services.

Office Machines: The objective of this course is to develop the ability to operate at a proficiency level such machines as adding-listing machines, calculators, specialized bookkeeping machines, transcribers, duplicators, and simulated key-punch machines.

Business Law: This course deals primarily with the application of the legal principles and procedures to the personal and business problems of the individual. It also promotes the understanding of laws regulating the total economy which affect the individual as a producer-consumer.

Salesmanship: The vocational aspect of this course is most frequently emphasized. However, it also contributes to general education.

The content includes principles of selling--the approach, demonstration, meeting objections, and closing the sale. Advertising and display together with product analysis may be included.

Vocational Distributive and Cooperative Education: Supervised work experience programs offer the student a worth-while (and excellent) opportunity to bridge the gap between the instruction received in the classroom and the practical training received on the job.

Distributive education should provide broad training related to distributive occupations--those followed by proprietors, managers, or employees engaged primarily in marketing or merchandising goods and services.

Cooperative occupational education correlates actual work experience in the community with classroom instruction under the supervision of a coordinator who is occupationally competent. The community and the school cooperate to give occupational instruction to students who want, need and can profit from such training.

Cooperative programs in business education may be in distributive education, in office or business occupations, in diversified occupations, or in cooperative occupations education.

VII. SUMMARY

1. The business education curriculum should provide for economic understanding, personal understandings and appreciations, and vocational training.
2. The Vocational Education Act of 1963 increased enthusiam for business education which has always been a popular elective in secondary schools.
3. The tendency to separate college preparatory from vocationally oriented students handicaps both groups.
4. At least a third of the public school population receives very little in the way of occupational preparation.
5. The typical American secondary school still teaches the basic "big three" courses: typewriting, bookkeeping, and shorthand.
6. Many schools are no longer teaching two years each of shorthand, typewriting, and bookkeeping.
7. Two basic weaknesses in the business education programs are: only a few programs are divided into appropriate sequence; and too few are established around a core of basic subjects.
8. Specialization and generalization should continue to be valid building blocks for educating business students.
9. Objectives of a comprehensive high school should be to provide a general education for all the future citizens, to provide good elective programs for those who wish to use their acquired skills immediately upon graduation, and to provide satisfactory programs for those whose vocations will depend upon further education in a college or university.

10. The expansion and increasing complexities of business and industry accentuate the need for additional emphasis on business education in secondary schools.

APPENDIX D

CHAPTER I

SURVEY OF CURRENT INDUSTRIAL ARTS OFFERINGS

At a time when there has been much discussion among educators in industrial education as to what we have been doing, what we should be doing, and what we will be doing in the future in industrial arts, it seems desirable to review existing industrial arts programs. From this review we need to cull out and pull together from the various industrial arts programs, both past, present, and future, a defensible program for industrial arts in the comprehensive high schools of Missouri.

This chapter will attempt to review the status of industrial arts at both the national and local level.

For the first time, in 1962-63, a comprehensive review of the industrial arts program in the public secondary schools of the United States has been made available. This study was conducted by Marshall L. Schmitt and Albert L. Pelley.

"Following are the 76 course titles (titles as submitted by the respondents) which were merged into the 16 classifications, listed in the order of the number of students taking the course-the largest number first:"

1. General Industrial Arts

Comprehensive General Shop
Exploratory
General Shop
Industrial Arts, Level I
Industrial Arts, Level II
Industrial Arts, Level III
Industrial Arts, Level IV
Industrial Economics
Science and Industrial Arts Interpretation

2. General Woods

Advanced Woodwork
Carpentry
Construction and Industrial Arts
Finishing Materials and Methods
General Woodworking
Machine Woodworking
Patternmaking
Production (Wood)
Related Woodwork
Upholstering

3. Drafting

Advanced Graphics
Aircraft Drafting
Architectural Drawing
Drafting
Electrical Drafting
Engineering Drawing
Industrial Design
Machine Drafting
Mechanical Drawing
Sheetmetal Drafting
Structural Drafting
Topographical Drafting

4. General Metals

Bench Metalworking
Experimental Metalworking
Foundry and Forging
General Arts
General Metals
Industrial Occupations
Machine Metalworking
Metal and Power Mechanics (Girls)
Sheet Metalworking
Technical Metals
Welding

5. Graphic Arts

Graphic Arts
Printing

6. Electricity/Electronics

Electrical Power
Electricity/Electronics
Electronics
General Electricity

7. Crafts

Art Metalworking
Crafts
General Crafts
Jewelry and Lapidary

Leathercraft
Leatherworking
Metal Arts
Special Education
Stage Craft

8. Power Mechanics

Aircraft Machines
Automotive Mechanics
Marine Engineering Mechanics
Power Mechanics
Related Auto Information

9. Home Mechanics

Home Arts and Houseplanning
Home Mechanics, grades 7-8
Home Mechanics, grades 9-12

10. Photography

Photography

11. Ceramics

Ceramics

12. Industrial Arts Mathematics and Science

Industrial Arts Mathematics and Science

13. Plastics

Plastics

14. Textiles

General Textiles

15. Transportation

Transportation

16. Other

Brick Masonry and Layout
Building Trades
Farm Shop
Gardening
Preengineering Shop

Highlights regarding the course content as revealed by the subject areas and instructional areas for the eight major industrial arts courses follow:

GENERAL INDUSTRIAL ARTS

This course enrolles the largest number of students in the program. Because the course general industrial arts offers a great variety of both subject and instructional areas, the percent for each is small. Every instructional area that made up more than 2 percent of the total content taught in general industrial arts fell into one of the four following subject areas: drafting (lettering, sketching, and design), woodworking (finishing, furniture making, cabinet making, carpentry, woodturning), metalworking (art metal, sheetmetal, bench metal), and electricity/electronics (wiring and magnetism). Topics such as the following would likely be taught in the class: scale drawings, alphabet of lines, sketching and defining ideas, types and applications of glues, wood suited for furniture construction, tree structure and identification, kinds of metal manufacturing concerns, general characteristics of electric circuits, and many others. The percent of theoretical and laboratory instruction, about 30 percent of the instruction in general industrial arts would be expected to be taught in these topics. Conversely, about 70 percent of the instruction would be expected in laboratory activities involving operations, processes, tools, and machines commonly found in the subject area and/or instructional areas reported in the course. About one-third of the teachers start their beginning general industrial arts class by having the students select a project from a selected group of projects. Teachers generally meet their classes one period a day, five times a week, for one school year.

GENERAL WOODS

In these classes 12 percent of the content is devoted to drafting, with the major emphasis on sketching and design. About 80 percent of the course is devoted to woodworking activities, with major emphasis on finishing, furniture making, cabinet making, and woodturning. About 70 percent of the instructional time is spent in laboratory activities and 30 percent in theoretical or related activities. Two methods of instruction prevail in starting beginning general woods classes: First, about one-third of the teachers assign one project to the whole class and, second, about one-third allow students to select a beginning project from a limited group of projects. Students in general woods classes account for 21.8 percent (852,713) of the enrollment, the second largest course enrollment in industrial arts. General woods courses are generally scheduled 5 days a week, one period a day, for one school year.

DRAFTING

Virtually no other subject area in industrial arts is taught in drafting courses--except about 1 percent in woodworking. This is no doubt related to the design and development of a three-dimensional wooden model for a home dwelling. About 13 to 15 percent of the instruction areas in drafting center around lettering, sketching, and machine drawing. Design, sheet metal drawing, blueprint reading, architectual drawing and engineering drawing comprise from 7 to 9 percent. Drafting courses enroll 818,553 students (20.9 percent) in the industrial arts curriculum area, accounting for the third largest enrollment in the area. About 70 percent of the instruction is devoted to laboratory activities--that is, drawing--and about 30 percent, to theoretical and related instruction. Most classes meet 5 days a week, one period a day, for one school year.

GENERAL METALS

Two subject areas comprise most of the instruction in this course--metalworking (about 80 percent) and drafting (11 percent). Instructional areas in metalworking, each reporting from 5 to about 11 percent of the total instruction, are: art metal, sheet metal, bench metal, machine shop, heat treating, foundry, forging, metals industries, and welding and brazing. Enrollments in general metals courses account for 13.7 percent (537,908) of the students, the fourth largest enrollment in the industrial arts curriculum area. About 70 percent of the instruction in general metals is devoted to laboratory activities and 30 percent, to theoretical or related instruction. The two most frequent methods of starting a beginning class in general metals is to assign one project to the whole class, and to divide the class into groups and assign different projects to each group. General metals classes generally meet 5 days each week, one period a day, for one school year.

GRAPHIC ARTS

Two subject areas predominate in graphic arts courses--graphic arts, 91.2 percent, and drafting, 6.7 percent. About 45 percent of the instruction areas in graphic arts center about letterpress printing, block printing, and the printing industries. Silk screen and bookbinding claim almost 20 percent combined. Graphic arts enrollments account for 177,340 students (4.5 percent), the fifth highest enrollment in the industrial arts curriculum area. About 70 percent of the instruction in graphic arts is devoted to laboratory activities and 30 percent to theoretical or related information. Two methods of instruction are generally

used to start beginning classes in graphic arts: First, assign one project to the whole class and, second, assign students a series of sequential jobs or activities. Most graphic arts classes meet one period each day, five times each week, for the school year.

ELECTRICITY/ELECTRONICS

Basically, two subject areas, electricity/electronics (87.9 percent), comprise the instruction in electricity/electronics classes. Of the 87.9 percent of the instruction in electricity/electronics, almost 13 percent is in wiring and over 11 percent in magnetism. Each of the instructional areas lighting, applicances, measuring devices, communications, electronics, and generation comprise from 7 to almost 10 percent each.

Electricity/electronics courses enroll 170,117 students, or 4.3 percent. About one-half of the instruction time is devoted to laboratory work and one-half to theoretical or related instruction. This percent of time varies from the other courses reported in that more time is devoted to theoretical instruction than in any other course.

About one-third of the teachers start their beginning classes by assigning students a series of sequential jobs or activities. The next most used method is to divide the class into groups and assign a different project to each group. Most electricity/electronics classes meet 5 days a week, one period a day, for a school year.

CRAFTS

All subject areas are represented in this course, as in the general industrial arts course. However, there is wider variation both in subject areas and instructional areas. The crafts course has the greater percent of instruction devoted to the subject

areas of leather (30 percent); plastic (13.5 percent), and metalworking (11.0 percent).

Enrollments in industrial arts crafts courses account for 163,176 students, of which 27,715 are girls. This course enrolls more girls than any other industrial arts course. The time devoted to laboratory instruction in craft courses is reported between 72 to 75 percent; consequently, theoretical or related instruction is slightly less than in other courses. There are considerable variations in the time devoted to laboratory or theoretical work by enrollment size and type of school, and region.

POWER MECHANICS

Instruction in power mechanics centers about three subject areas--electricity/electronics, metalworking, and power mechanics. Within the last subject area, the highest percentage of instruction is devoted to power mechanics (48.5 percent).

Enrollments in power mechanics courses account for 103,625 students, 2.7 percent. About half of the instructional time is devoted to laboratory instruction and half to theoretical instruction. Most classes meet 5 days a week, one period a day, for one school year.

Each of the above major courses comprise over 100,000 students. The remaining courses--home mechanics, photography, ceramics, industrial arts and mathematics and science, plastics, textiles, transportation, and all others--involve few students by comparison and are, therefore, not reported in detail" (B:21-23, 26-27).

Two status studies will be reviewed that give information on present industrial arts offerings on the state level. The states being Kansas and Missouri.

In a doctoral dissertation by Charles L. Bell entitled Status of and Need for Industrial Arts in the Public Schools of Kansas with Implications for Teacher Education (Ed. D. 1964), using data secured from the records of the Kansas State Department of Public Instruction and through information forms obtained from 701 industrial arts teachers in the public schools of Kansas, he found the course offerings in senior high industrial arts as shown in Table I.

TABLE I

INDUSTRIAL ARTS COURSES TAUGHT IN PUBLIC SENIOR HIGH SCHOOLS OF KANSAS IN 1962-63

Courses	Rank of Course	Schools Offering Course	
		Number	Per Cent
General Woodworking	1	285	68.4
General Shop	2	234	56.0
Drafting	3	228	54.5
Woodworking II	4	83	19.8
General Metals	5	65	15.6
Auto Mechanics	6	54	12.9
Drafting II	7	39	9.3
Welding	8	33	7.9
Crafts	9	32	7.7
Architectural Drawing	10	27	6.5
General Metals II	11	23	5.5
Machine Shop	12	19	4.6
Electricity	13	16	3.8
Woodworking III	14	13	3.1
Printing	15	11	2.6
Auto Mechanics II	16	10	2.4
Home Mechanics	17	9	2.2
Auto Information	18	7	1.7
General Shop II	19	6	1.4
Machine Drawing	19	6	1.4
Drafting III	21	5	1.2
Cabinetmaking	21	5	1.2
Electronics	23	4	1.0
Advanced Printing	23	4	1.0
Farm Shop	25	3	.7
Carpentry	25	3	.7
Body and Fender	27	2	.5
Welding II	27	2	.5
Engineering Drawing	27	2	.5
Shop Maintenance	27	2	.5
Electricity II	27	2	.5
Photography	32	1	.2
Leatherwork	32	1	.2
Advanced Machine Drawing	32	1	.2

Courses	Rank of Course	Schools Offering Course	
		Number	Per Cent
Blueprint Reading	32	1	.2
Bench Metal	32	1	.2
Graphic Arts	32	1	.2
Advanced Cabinetmaking	32	1	.2
Radio	32	1	.2
Millwork	32	1	.2
Metal Fabrication	32	1	.2
Shop Math	32	1	.2
Industrial Processes	32	1	.2
Machine Shop II	32	1	.2
Sheet Metal	32	1	.2
Electricity III	32	1	.2
Auto Mechanics III	32	1	.2
General Shop III	32	1	.2

Source: Information furnished by teachers for 418 senior high schools.

"As revealed in Table I, the three most frequently offered senior high industrial arts courses were general woodworking, general shop, and drafting" (A:25-6).

"The industrial arts program in junior high schools was composed predominately of general woodworking, general shop, drafting, and general metals, as indicated in Table II. Only 3.8 per cent of all senior high schools offering industrial arts taught electricity while 18.8 per cent of the junior high schools offered this course. The different industrial arts course offerings numbered 13 in junior high schools as compared to 47 in senior high schools" (A:27).

TABLE II

INDUSTRIAL ARTS COURSES TAUGHT IN PUBLIC JUNIOR HIGH SCHOOLS OF KANSAS IN 1962-63

Courses	Rank of Course	Schools Offering Course	
		Number	Per Cent
General Woodworking	1	47	55.3
General Shop	2	39	45.9
Drafting	3	27	31.8
General Metals	4	22	27.1
Electricity	5	16	18.8
Sheet Metal	6	10	11.8
Crafts	6	10	11.8
Printing	8	9	10.6
Special Education Shop	9	1	1.2
Advanced Metals	9	1	1.2
Advanced Woodworking	9	1	1.2
Graphic Drawing	9	1	1.2
Electronics	9	1	1.2

Source: Information furnished by teachers for 85 public junior high schools.

"In addition to the four common industrial arts offerings--general woodworking, general shop, drafting, and general metals--a number of other kinds of industrial arts courses were provided by the secondary schools of the state. Some of these offerings were advanced courses, others represented specialized areas" (A:27-8).

The other doctoral dissertation was conducted by Donald E. Wallis in the public schools of Missouri. Wallis secured his data from the records of the Missouri State Department of Education and through information forms from 633 industrial arts teachers in the public secondary schools of Missouri. His findings are reported in Tables III and IV.

TABLE III

INDUSTRIAL ARTS COURSES TAUGHT IN CLASS AAA
PUBLIC HIGH SCHOOLS OF MISSOURI
IN 1964-65

Courses	Rank of Course	Schools Offering Courses	
		Number	Per Cent
General Drafting	1	113	89.7
General Woodwork	2	97	77.0
General Shop	3	82	65.1
General Metalwork	4	75	59.5
Advanced Woodwork	5	36	28.6
Applied Electricity	6	22	17.5
Advanced Drafting	7	19	15.1
Architectural Drawing	8	15	11.9
Engineering Drawing	9	12	9.5
Machine Shop I	10	11	8.7
Advanced Metalwork	10	11	8.7
Machine Drawing	10	11	8.7
Basic Industrial Arts	13	9	7.1
Power Mechanics I	13	9	7.1
Crafts	13	9	7.1
Machine Woodwork	16	8	6.3
Basic Electricity and Electronics	17	6	4.8
Basic Technical Drawing	18	4	3.2
Printing	18	4	3.2
Intermediate Metals	18	4	3.2
Advanced Printing	21	3	2.4
Descriptive Geometry	21	3	2.4
Sheetmetal	23	2	1.6
Welding	23	2	1.6
Advanced Electricity	23	2	1.6
Home Mechanics	23	2	1.6
Engineering Drawing II	27	1	.8
Home Planning	27	1	.8
Metal Art	27	1	.8
Blueprint Reading	27	1	.8
Wood Turning	27	1	.8
Auto Mechanics I	27	1	.8
Auto Mechanics II	27	1	.8
Brick Masonary	27	1	.8
Power Mechanics II	27	1	.8

Source: Information furnished by 256 teachers for 126 high schools.

TABLE IV

INDUSTRIAL ARTS COURSES TAUGHT IN CLASS AAA PUBLIC JUNIOR HIGH SCHOOLS OF MISSOURI IN 1964-65

Course	Rank of Course	Schools Offering Course	
		Number	Per Cent
General Shop	1	66	80.5
Woodworking	2	23	28.0
Crafts	3	33	26.8
Metalworking	4	15	18.3
Drafting	5	13	15.9
Special Education Shop	6	7	8.5
Electricity	6	7	8.5
General Metals	6	7	8.5
Printing	9	4	4.9
Leathercraft	10	2	2.4
Plastics and Ceramics	10	2	2.4
Graphic Arts	10	2	2.4
Power Mechanics	13	1	1.2
Home Living	13	1	1.2

Source: Information furnished by 128 teachers for 82 junior high schools.

"As might be expected, the range of course offerings was much smaller in the junior high schools than in the high schools. Only fourteen different course titles were mentioned for the junior high as compared to forty different titles in the high school industrial arts programs. A course appearing in the junior high listing but not found at the high school level was Special Education Shop. This course was offered by seven of the Class AAA junior high schools" (C:29).

CHAPTER II

REVIEW OF RELATED LITERATURE AND OPINIONS FROM COMPETENT PROFESSIONALS

The national study by Schmitt and Pelley gives us the following information on enrollment and implications for industrial arts.

"Total enrollment in industrial arts courses (boys and girls) in grades 7-12 is nearly 4 million. Enrollments are concentrated in the junior high school and in schools whose enrollment size is over 1,000. The highest percentage of students is found in the 9th grade, where 24 percent of the enrollment is reported.

The following implications represent the professional judgment of the specialist for industrial arts in an attempt to extract meanings from the data and to suggest ways to improve industrial arts education in the United States.

One of the most interesting facts uncovered by this study was the increased compulsory requirements for students (both boys and girls) to take industrial arts instruction during the period from 1954-55 through 1962-63. Although the increases were not large, they are significant because the national concern at that period of time was focused on meeting the needs of the academic-type student. Evidently, industrial arts instruction is meeting many of the basic educational needs of all students--academic and non-academic. No doubt curriculum planners are realizing that, through direct experience, abstract concepts are put into actions which the learner himself can understand more readily, and that industrial arts education can contribute both to the development of an

understanding of technology and its impact on society, and to the discovery and development of creative talents in students which can be characterized as technological.

An analysis of the instructional content reveals that drawing is indeed an important part of industrial arts instruction. In fact, the high percentage of drawing or planning activities in most industrial arts courses reveals the interrelationship of problemsolving and its practical application in each course. It is the combination of these two aspects which makes an industrial arts activity a real creative act, and the two processes reinforce one another.

The current industrial arts instructional program is too narrow in scope. Not only is the content narrow with respect to course offerings, but the instructional content within the courses themselves is not as broad as the professionals in the field recommend. This study reveals a concentration of instruction in the traditional subject areas--such as drawing, woods, and metals. To improve the program, more instructional content should be reflected in the subject areas of graphic arts, electricity/electronics, and power mechanics. These newer subject areas relate to the modern technological achievements in communications and in power and transportation.

Further studies should be initiated to concentrate on the new developments in industrial arts education. Followup studies in the schools which indicated new course changes or major revisions of present courses could provide indications of the new

direction for industrial arts education. For example, some of the new titles of industrial arts courses are science and industrial arts interpretation, industrial economics, construction and industrial arts, industrial occupations, experimental metalworking, and marine engineering mechanics.

Although this study is a status report on industrial arts education in the public secondary schools in the United States, one major fact stands out: the current industrial arts curriculum does not even measure up to the program recommended by the profession 10 to 20 years ago. Yet the new curriculum suggests new structures which would reorganize the instructional content to reflect the technology around the emerging subject areas in manufacturing, communications, power and transportation, electricity/electronics, and research and development.

Massive efforts need to be taken before the new industrial arts curriculum or any other new approach to teaching the industrial arts can make much of an impact on the current program and eventually improve the technological literacy of the American public" (B:29-30).

Both of the status studies review in Chapter I attempted to pinpoint the content for an "ideal" industrial arts program for the states in which the study was conducted.

The study by Charles L. Bell used a rating scale with a jury of 12 industrial arts educators, comprised of heads of industrial arts departments in teacher education institutions of Kansas and directors of industrial arts in the larger city school systems of Kansas, to determine what they felt to be the "ideal" industrial arts program.

"It was assumed, for the purpose of this study, that the judgment of these men was the best, or at least a practical approach, to ascertain what subject matter areas should be included in an 'ideal' industrial arts program for Kansas" (A:95-96).

The tabulation of the ratings revealed that Planning and Mechanical Drawing were considered the most important subject matter areas as indicated by Table V.

TABLE V

INDUSTRIAL ARTS SUBJECT MATTER AREAS CONSIDERED MOST ESSENTIAL BY INDUSTRIAL ARTS EDUCATORS FOR PUBLIC JUNIOR AND SENIOR HIGH SCHOOLS OF KANSAS

Junior High School			Senior High School		
Rank	Subject Matter Areas	Value Total*	Rank	Subject Matter Areas	Value Total*
1	Planning	30	1	Planning	35
2	Mechanical Drawing	29	1	Mechanical Drawing	35
2	Freehand Drawing	29	3	Machine Shop	33
4	Electricity	28	4	Auto Mechanics	31
5	Woodworking	27	5	Welding	30
6	Bench Metal	25	5	Electricity	30
7	Sheet Metal	23	7	Freehand Drawing	29
8	Home Mechanics	22	7	Woodworking	29
9	Plastics	19	9	Radio (Electronics)	28
9	Leatherwork	19	10	Bench Metal	27
9	Art Metal	19	11	Architectural Drawing	26
12	Ceramics	16	12	Graphic Arts	24
12	Crafts	16	12	Foundry	24
12	Graphic Arts	16	14	Sheet Metal	23
15	Radio (Electronics)	15	15	Home Mechanics	21
16	Foundry	14	16	Photography	20
17	Photography	13	16	Plastics	20
18	Machine Shop	10	18	Art Metal	19
18	Welding	10	19	Crafts	16
18	Transportation	10	20	Transportation	14
21	Auto Mechanics	9	21	Leatherwork	13
22	Cement Work	9	22	Ceramics	12
22	Architectural Drawing	9	23	Cement Work	10

*Values assigned to ratings were "Of No Importance," zero; "Of Small Importance," one; "Important," two; "Very Important," three.

Source: Information furnished by 12 industrial arts educators in Kansas.

The study by Donald E. Wallis that was reviewed in Chapter I also attempted to pinpoint the "ideal" industrial arts program.

"A rating scale listing sixteen subject matter areas of industrial arts was perfected and sent to a jury of fifty-two industrial arts educators composed of directors and supervisors of industrial arts in Missouri, the Missouri State Director of Industrial Education, and the active members of the Mississippi Valley Industrial Arts Conference to determine, in their opinion, the most essential industrial arts subject matter areas that should be taught in the secondary schools of Missouri. It was assumed, for the purposes of this study, that the judgement of these men was the best means available by which to ascertain what subject matter areas should be included in a desirable industrial arts program for Missouri. The State of Missouri lies in the geographical heart of the area in which the jury members resided and all were recognized industrial arts educators in their respective states and communities with several having national reputations in this field.

The tabulation of the ratings revealed that general woodworking and general drafting were considered the least important subject matter areas for the junior high school, as indicated in Table VII. At the time of the study, however, general shop was being taught in more schools and to more pupils than any other industrial arts course at the junior high level. However, when the activities included in the general shop courses are considered, actual practice compared more favorably with the rankings of the jury, as woodworking, planning, and drawing ranked at the top of the list of activities included.

The jury of educators ranked electricity/electronics and general drafting first and second in importance as areas for inclusion in the senior high industrial arts program, as shown in Table VI. Electricity/electronics was not accorded this degree of importance in the industrial arts programs of Missouri at the time of the study" (C:106-7).

TABLE VI

INDUSTRIAL ARTS SUBJECT MATTER AREAS CONSIDERED MOST ESSENTIAL BY INDUSTRIAL ARTS EDUCATORS FOR PUBLIC JUNIOR AND SENIOR HIGH SCHOOLS OF MISSOURI

Junior High School Grades 7-9			Senior High School Grades 10-12		
Rank	Subject Matter Areas	Point Value*	Rank	Subject Matter Areas	Point Value*
1	General Woodworking	149	1	Electricity/ Electronics	155
2	General Drafting	148	2	General Drafting	153
3	General Metalwork	145	3	Machine Metals	139
4	Electricity/ Electronics	130	4	Power Mechanics	137
5	General Graphic Arts	124	5	General Metalwork	135
6	Industrial Crafts	118	6	Architectural Drawing	131
7	Power Mechanics	114	6	Welding	131
8	Home Mechanics	106	8	Foundry	121
9	Plastics	96	8	General Graphic Arts	121
10	Leatherwork	88	10	General Woodworking	118
11	Foundry	79	11	Auto Mechanics	116
12	Machine Metals	67	12	Plastics	106
13	Welding	64	13	Home Mechanics	70
14	Architectural Drawing	59	13	Industrial Crafts	70
15	Auto Mechanics	51	15	Leatherwork	58
15	Cabinet Making	51	16	Hydraulics	11

*Point values assigned to ratings were "Of No Importance," zero; "Of Doubtful Importance," one; "Of Some Importance," two; "Important," three; "Very Important," four.

Sourse: Information furnished by 52 industrial arts educators in Missouri and surrounding states.

CHAPTER III

RECOMMENDATIONS FOR INDUSTRIAL ARTS IN THE COMPREHENSIVE HIGH SCHOOLS OF MISSOURI

WHAT IS INDUSTRIAL ARTS?

Industrial arts is a school program through which youth study the tools, materials, processes, products and occupations related to industry in the United States. Industrial Arts has further been defined as a phase of general education which is quite defensible at the elementary and junior high level, but the definition is not feasible for the senior high. This restricted definition came about because of an attempt to dichotomize education into two camps--general and vocational. General education is more frequently defined as common learnings desirable for all. When industrial arts at the senior high is considered in relationship to this definition of general education, it does not seem to be logical to insist that most of the industrial arts offerings in the senior high school should be "common learnings desirable for all."

A more defensible frame of reference for industrial arts is based upon the concept of an educational continuim ranging from general to specialized education. Specialized education being those school experiences designed to take into account and/or promote unique interests, needs and abilities rather than those that are common to all. Industrial Arts can meet many specialized needs of youth. Obviously some of these needs are occupational; however, there are many needs that could not be considered as vocation

General and Specialized Functions of Industrial Arts

It is widely recognized that Industrial Arts has both general and specialized functions to fulfill. Some of these functions which industrial arts can perform are unique and can be carried out effectively only through a program of industrial arts, while others are supplementary functions that are performed jointly with various other areas of the school program.

These guiding functions apply to an entire program of industrial arts for the secondary schools: therefore, for the various levels and for specialized aspects of the program the emphasis will, by necessity, be directed to best meet the needs of the group being served.

The functions have been grouped into these five categories:

A. The Interpretive Function
B. The Exploratory Function
C. The Technical Competency Function
D. The Preparatory Function
E. The Supplementary Function

The Interpretive Function. Two of the dominant elements in our culture today are technology, and the institution of industry which promotes and utilizes technology. A dynamic program of industrial arts should accept the responsibility for assisting youth in gaining a realistic understanding and interpretation of this important segment of our society. Properly implemented, this function can assist youth in their adjustment to the industrial and highly technical world in which they live, whether they are consumers or producers or both.

The Exploratory Function. For individuals to make intelligent choices and decisions, they must have a background of information and experience to draw upon. Through the industrial arts program, students should be provided with the opportunity to have exploratory experiences with many types of tools, materials, processes, products, and occupational fields. This exploratory function seeks to allow students to discover areas of interest which may be later pursued on an occupational or avocational basis. Primarily focus of grades seven and eight.

The Technical Competency Function. To build, to create, to control the environment, are innate drives of man. To satisfy these drives, man needs competencies which are made up of acquired skills and knowledge. Industrial arts contributes to these competencies in two primary ways: (1) It seeks to provide the opportunity for youth to gain knowledge and skill in the care and use of common tools and fundamental production equipment, as well as basic materials of our culture; (2) It seeks also to provide the opportunity for experiences necessary for youth to gain knowledge of and skill in the preparation and interpretation of working drawings as well as other forms of graphical presentation which are essential to technology. It is recognized that a certain degree of technical competency is essential to the development of confidence and feelings of success which are so important to individual self-realization. In addition to the contribution which these competencies make to self-realization, most individuals have continuing opportunities for utilizing experiences with basic tools, machines, and materials, throughout their lives.

The Preparatory Function. Most all subject matter areas derive a measure of their value from the fact that the acquired skill and knowledge form a background upon which later experience can be built. Industrial arts is no exception to this fact, as there are three rather unique aspects of its preparatory function. (1) Industrial arts can serve as a preparatory program for post-high school education in certain fields. For example: a solid background of drafting is invaluable to the engineering student, since colleges of engineering increasingly assume this as a part of a high school student's background. Courses in electricity for the student planning a career in electronics or electrical engineering;courses in architectural drawing for the potential architect; courses in general metals for the student interested in the field of metallurgy are fundamental to successful college orientation in these fields. (2) Another phase of this function is that of pre-vocational preparation. Many youth who wish to follow a specialized vocational program at the secondary or the post-secondary school level, will find the basic skills and knowledges gained through the industrial arts program at the secondary or the post-secondary school level, will find the basic skills and knowledge gained through the industrial arts program extremely valuable as a base upon which to build a specialized vocational education. (3) A third part of the preparatory functions by adequately equipping youth to enter intelligently into their technical-industrial environment.

The Supplementary Function. The preceding four functions encompass the most unique contributions which industrial arts makes toward the education of youth. The following group of purposes is shared somewhat in common with other school subjects. This shared responsibility does not make them any the less important; however, it does place them in a subordinate role when discussing purposes of the industrial arts program. A well developed program should provide the opportunity for youth to: (1) apply certain knowledges gained through other subject matter experiences, in the solution of practical problems, since this practical use of knowledge increases the interest in any subject matter and reinforces the learning of the content; (2) develop the ability to plan effectively, using the elements of the scientific method in the solution of problems. The industrial arts program provides a natural framework for this "problem solving" approach to learning; (3) develop work habits and attitudes conducive to safe and efficient procedures; (4) develop desirable personal and social traits. As a result of the informal atmosphere which exists in a laboratory portion of an industrial arts course, many opportunities are available for students to participate one with another in the use of tools and materials, as well as in the accomplishment of the constructional process; (5) develop an interest in the leisure time application of the tool skills and associated knowledge gained through the industrial arts program.

Implementing the Functions

In an attempt to implement the preceding functions, content must be identified and programs must be developed which will provide the framework whereby the roll of industrial arts might be realized. Looking first at the junior high school, a broad and basic pattern of content and experiences can be planned to support the first two functions as well as the third and fifth function to a degree. This content can be organized into courses which contribute directly to the general education or common learnings desirable for all youth. When senior high school programs of industrial arts are developed, special emphasis is placed upon experiences which will meet the differing interests, needs and abilities of youth. These specialized experiences are built upon the junior high background and seek to support functions one, three, four and five.

Technical Content Areas

The technical subject matter which provides a basis for the experiences provided to youth through the industrial arts program is typically classified into the following content areas:

Level I

Basic Units

1. woods
2. metals
3. electricity
4. drafting
5. power mechanics
6. plastics
7. graphic arts
8. industrial crafts
   a. ceramics
   b. leather

Beyond these basic content areas, it is somewhat difficult to gain some unanimous opinion of the specific content to be included in each area, or the exact organization through which this content would be applied.

Organization for Instruction at the Junior High Level

During the seventh and eight grades, the youngster should be provided with an opportunity to have experiences in eight basic technical areas. At this time, the multiple activity course appears to be the best structure to give the desired breadth experience at the junior high level. This multiple activity type of experience, which in the past has been termed "general shop", although this terminology is somewhat questionable, can provide the necessary orientation to the field and certain fundamental exploratory experiences during grades seven and eight. The titles "Introduction to Industry," "Exploring Industry," and "Orientation to Industry" are being advocated rather than the term "general shop," which perhaps more adequately describes the facility than the course.

Typically the students would experience four of the eight content areas during each of the two years. If the size of the school unit were only large enough to require one shop facility, it would be necessary to equip the facility with the tools and equipment essential to conduct a basic instructional program in all eight content areas. However, larger school units might find it more efficient to have separate facilities for two or three of the more closely related technical content areas, whereby the student can be rotated through the content areas.

Organizing for Instruction at the Senior High Level

Recognizing that the primary role of industrial arts at this level is to meet the specialized needs of youth; it is not logical to expect that a standardized program could be proposed that would be equally effective in all senior high schools. The eight technical content areas, previously described, serve as the basis for the program development; however, decisions regarding the specific content organization, methodology and the nature of the learning activities are dependent upon the needs, abilities, and interests that characterize a given group of students to be served.

The courses which have been most frequently offered to meet the needs of senior high school youth have been eighteen to thirty-six week experiences designed as extensions of the six to nine week technical units provided in grades seven and eight. Some examples of the course titles which typify these offerings are:

LEVEL II	LEVEL III
BASIC TECHNICAL COURSES	ADVANCED TECHNICAL COURSES
DRAFTING	
General Drafting	Technical Drafting Advanced Drafting (Pre-engineering)
WOODS	
General Woods	Wood Machine Technology
METALS	
General Metals	Metal Machining Technology
ELECTRICITY	
Basic Electricity	Electricity/Electronics

LEVEL II	LEVEL III
BASIC TECHNICAL COURSES	ADVANCED TECHNICAL COURSES
MECHANICS	
General Power Mechanics	Power Systems
GRAPHIC ARTS	
General Graphic Arts	Printing and Lithography
INDUSTRIAL CRAFTS AND PLASTICS	
General Plastics and Ceramics	

The chart in Figure I typifies Course Content for the Industrial Arts programs at level II.

TABLE VII

INDUSTRIAL ARTS BASIC CONTENT GUIDE

LEVEL II

BASIC TECHNICAL COURSES

METALS	DRAFTING	ELECTRICITY	WOODS	GRAPHIC ARTS	POWER MECH.	INDUSTRIAL CRAFTS
Bench Metal	Sketching	Basic Electrical Theory	Layout	Bookbinding	History of Power	Plastics
Sheet Metal	Geometrical Constr.	Sources and Effects	Basic Hand Tool Operations	Hand Composition	Basic Mechanisms	Industrial History
Art Metal	Orthographic Projection	Conductors and Insulators	Basic Machine Operations	Presswork	Limiting Factors	Types of Plastics
Forging and Heat Treating	Pictorial	Circuits	Assembly	Photography	Internal Combustion	Shaping and Forming
Welding	Graphs and Charts	Meters and Controls	Finishing	Block Printing	Engines	Fastening
Foundry	Pattern Development	Magnetism	Technology	Silk Screen	Cosmic Radistion	Ceramics
Machine Work	Reproduction	Power Application			Transmission Mechanical Electrical Hydraulic Pneumatic	Industrial History
		Protective Devices and Safety				Forming Decorating Firing

This pattern of course offerings is typically subject matter centered with the choice of content being dependent primarily upon the structure of the technical body of knowledge. Not only does this pattern of course offerings provide an opportunity for rather extensive technical specialization, but it also provides some basic courses for the student who wishes to freely elect a variety of technical experiences rather than a series of courses in a single technical specialty.

In review, level I includes the basic industrial arts units available at the seventh and eighth grade. Level I units are designed as general education that provide common learnings desirable for all. Level II courses, basic technical courses, are designed as specialized education beginning at the ninth grade and building on the basic units explored at the seventh and eighth grade. The level II courses are designed to promote unique interest, needs and abilities rather than those that are common to all. Level III courses, advanced technical courses, must follow level II courses and will be specialized education, but are not intended to prepare for a specific occupation. Some additional examples of level III courses above the ones listed by course title are listed on the following pages.

Beyond this basic program, it would not be wise to propose a stereotyped pattern for all schools. However, several suggestions are offered for consideration after a study of the needs, interests and abilities of students in a given school has been made. Some

examples of the kinds of courses which might be added to the basic program, depending on the findings of such a study, are as follows:

1. A specialized course which would deal primarily with research and experimentation, materials, and processes could be established for students who are seeking greater understanding of the principles and concepts of the physical sciences and mathematics.

2. Specialized courses designed especially to contribute to the development of hobby and leisure time interest of youth and adults, may be organized in the area of constructional crafts, or home mechanics.

3. If a study of the school population would indicate that a large group moves into semi-skill occupations upon graduation or after drop-out, the administration might organize some specialized courses for this group that would give a greater amount of attention to skill development and work orientation than the typical industrial arts course would give. This type of specialized course would be most appropriately offered in the senior high and would normally preclude a background of study of a broad nature as outlined in the basic program.

4. While the nature of an industrial arts program is such that a great deal of individual and small group instruction is undertaken, the distinct and separate need of both the slow and rapid learner are less likely to be met in classes where the range of ability is too broad. A separate class then for the slow learner might be quite desirable as an addition to or supplement to the basic program in a school.

5. It may be indicated that a special class for gifted students in which the pace is accelerated and in which the content may be taught in cooperation with another department within the school might be established.

6. Another type of class for technical instruction, but not limited to the gifted student, could be one designed for students preparing for future careers in the technologically oriented areas such as engineering.

Summarizing the Program

To summarize this program then, it is believed that a total program of industrial arts in the secondary school would include a basic core of courses which would be looked upon as the fundamental or core program, which in some respects could be defended or justified as common education desirable for all, and courses of a specialized nature which would contribute to the desirable differences in the interests, needs and abilities among individuals. The possibility of moving beyond the base program should be investigated wherever the need is evident.

APPENDIX E

INTRODUCTION

Vocational education represents an opportunity for individuals to make a contribution to themselves and society through the orderly acquisition of marketable skills, knowledge, and attitudes. It is regarded as a means of acquiring broad training rather than a narrow set of skills to be used only by a single employer. Through vocational education, men and women can gain not only entry job skills, but a basis for growth in skills and knowledge which should give some assurance of lifetime employment.

A vocational education program cannot and should not assume responsibility for the failure of schools to meet the needs of all students. Indeed, vocational education, like other education, can be meaningful to the student only if there is motivation to learn and if the training provided is realistic in terms of the student's abilities, aspirations, and employment opportunities.

Vocational education does not lend itself to a regimented curriculum that would meet the needs of all comprehensive high schools. Programs of vocational education are an integral part of the community and region in which they exist. Therefore, the vocational education offerings must reflect the occupational needs of a given geographic region. Since these needs vary from place to place and change with the passage of time, a standardized sequence of course cannot be established that would be equally appropriate for any and all comprehensive high schools.

In lieu of a curricular pattern, it seems desirable to provide guidelines for program development in vocational education through a description of (1) the process whereby vocational education programs may be established as well as (2) the factors and conditions that are essential to the successful establishment and operation of a program of vocational education.

The Process of Program Development

Unlike some types of educational programs, the stimulation for program development in vocational education seldom comes from agencies outside of the local community. Typically some one individual or group within a community initiates an inquiry into the feasibility of a vocational education program for a given community. Most frequently this inquiry originates from the professional education leadership (the school administration); however, it may come from the lay citizenry or members of the school board. Once the question, "Should a vocational education program be developed in the community, and if so, what should be the nature of such a program?", achieves visibility and acceptance as a relevant educational question by the school administration and school board then, the following process might be implemented to provide data necessary to answer the question.

1. A steering committee composed of interested laymen, representatives of the school board and school administration should be established to:
   a. assess the manpower and training needs of the community and regional labor market area (In recognition of population mobility, local

and regional needs for trained manpower should be considered in relationship to the national labor force requirements and trends.)

b. consider the results of follow-up studies of graduates of the current educational program which may yield implications for vocational education.

c. analyze the results of interest surveys which reflect the desire for vocational education by students and their parents.

d. consider available vocational education programs which already exist in the area.

e. study the financial potential at the local, state and federal levels for support of a program of vocational education.

It is not suggested that the steering committee conduct the studies referred to above; but, rather that this group would provide stimulation to the process of gathering information which it must have in order to make meaningful recommendations to the board of education.

It is suggested that vocational education personnel from the state department of education and the state university be consulted regarding available data as well as procedures recommend for an inquiry of the type described.

2. If, after careful deliberation, the steering committee recommends the establishment of a program of vocational education, it should also be in a knowledgeable position

to recommend the occupational areas that should be considered for inclusion in a program of vocational education.

a. At this point the steering committee has fulfilled its function and can be released with appreciation.

3. After the steering committee makes its recommendations to the local board of education, the board and the professional leadership, in consultation with the vocational division of the state department of education, makes a decision to establish or not to establish a vocational education program. If the decision is positive some preliminary decisions regarding the occupational areas to be included in the program must be made.

4. Assuming that a vocational program is to be established, immediate steps should be taken to hire a vocational director who will exercise leadership in program and curriculum development.

5. After the vocational director has had an opportunity to become familiar with the local community and the program potential, the school superintendent, director and board of education should work toward the establishment of an advisory committee which involves management, labor, the lay public and school officials.

a. Vocational advisory committees have no administrative authority; however, they do provide valuable assistance in the development and maintenance of a vocational program by helping (1) to gain community understanding and support as well as (2) to insure a realistic and practical training program.

6. After firm decisions have been made concerning the scope and nature of the vocational program have been made by the director and his administration with the advise of the advisory committee and the council of state department personnel responsible for vocational education, teaching staff must be secured; courses must be planned, facilities must be made available.

Even though the process whereby a vocational program is established is in itself, a positive force which may help to bring about a successful program, there are a number of characteristics some of which were published in a 1960 bulletin of the U. S. Office of Education titled "Public Vocational Education Programs":

1. The program is directly related to employment opportunities, determined by school officials in cooperation with occupationally concerned and competent individuals and groups.
2. The content of courses is confirmed or changed by periodic analyses of the occupations for which the training is being given.

3. The courses for a specific occupation are established and maintained with the advice and cooperation of the various occupational groups concerned.
4. The facilities and equipment used in instruction are comparable to those found in the particular occupation.
5. The conditions under which instruction is given duplicate as nearly as possible desirable conditions in the occupation itself and at the same time provide effective learning situations.
6. The length of teaching periods and the total hours of instruction are determined by the requirements of the occupation and the needs of the students.
7. Training in a particular occupation is carried to the point of developing marketable skills, abilities, understandings, attitudes, work habits, and appreciations sufficient to enable the trainee to secure employment and make progress in the occupation for which he was prepared.
8. Day and evening classes are scheduled at hours and during seasons convenient to enrollees. (This implys classes for regular secondary students as well as classes for adults).
9. Students should be selected for courses on the basis of need, desire to enter a given occupation, and their ability to profit from the training.

10. Selection of the preceding type of student requires a sound program of occupational information and exploration at the junior high school level which may need to be continued into the ninth and tenth grades.
11. The teachers are competent in the occupation for which they are giving instruction and possess adequate professional qualifications for teaching.
12. Effective follow-up of all students who finish or drop out of a course, is an integral and continuing part of the program.
13. Continuous evaluation and research is an integral part of the program.

Due to the critical nature of some of the factors and conditions which characterize successful vocational education programs, it seems appropriate to describe in greater detail some of the elements such as the source and scope of the curriculum, relationships to employment, advisory committees and councils, placement and follow-up of graduates, occupational information and exploration, organization and administration practices and the vocational teacher. Therefore, a more complete description of these elements follow.

The Vocational Curriculum

"A vocational education curriculum may be described as a series of organized experiences designed by educators to prepare students for employment. These experiences should enable the student to acquire skills that will be needed for employment; give

him an opportunity to obtain knowledge in areas related to these skills; and provide an opportunity for him to acquire the knowledge, attitudes, and work habits needed for success in employment.

The content of the vocational education curriculum is derived from the world of work. This content is organized into selected broad fields--trades and industry, health, agriculture, office employment, marketing and distribution, technical work, and home economics. These broad fields of service have acquired status in vocational education because of the particular areas of the economy which they serve. Vocational education course content is determined by the demands of the student's chosen occupation and by his personal needs and abilities.

In these broad fields (and no doubt others will emerge), one can prepare for some 30,000 different job titles, representing a range from the skilled or semiskilled to the highly technical jobs. Because the world of work changes daily, it is necessary for the vocational curriculum to adjust accordingly.

Quality vocational education programs are built on sound basic education, which is necessary for all students. Nearly every student will at some point in time seek paid employment. His chances for success in a vocational program and on the job will depend largely on how well the total program of education prepares him to assume the necessary responsibilities.

Vocational education is concerned with education for employment, but it is also concerned with educating the "whole person." Recent research has shown that when education of the whole person is defined in terms of conversational interests, leisure time

activities, and affiliation with community organizations, there is no evidence to suggest that vocational graduates have been less soundly educated than academic graduates" (A: 291-2).

Scope of the Vocational Curriculum.

The single most pervasive concept in vocational education today can be most accurately described as a mandate handed to vocational educators in the Vocational Education Act of 1963: to make vocational education available to persons of all ages in all communities of the state.

All age groups will be profoundly affected by the changing employment patterns, and schools must equip themselves to prepare all of them for successful employment. The President's Panel of Consultants on Vocational Education pointed out a central focus for vocational education:

> "Education must be a continuing process--not simply a vaccination given to make the individual thereafter immune to ignorance or need for change. No longer will a person be able to enter the world of work with a set of skills which will serve him through his working life. He must be in a position to continually upgrade his skills or learn new skills if he is to maintain economic security. The need for life-long learning is now a fact of life" (B).

Occupational retraining or upgrading programs can reopen the door to employment for those whose skills are no longer in demand. Through reschooling, working people can protect themselves from unemployment and obsolescence of skills.

"The vastness and complexity of the world of work, and the rapid and constant changes in society, make it necessary to view vocational education as a continuum. Instruction must

be such that the student will know that he is engaged in taking a "first step." Occupational education should not be structured as an end in itself.

The high school student may get pre-employment training as a part of his high school education, or he may go into a post-high school vocational program upon graduation. The worker may take vocational training in the form of extension work while on the job, or he may enter a junior college or area vocational school for extensive upgrading or retraining.

It is important for the student to understand that he can and should go back to school when the need for further training is apparent to him or his employer. Vocational education does not impede further education; rather, it encourages the concept of lifelong learning" (A:296).

Relationship to Employment.

Since the primary goal of vocational education is to prepare the student for employment, the programs offered must be related to the job opportunities that exist in the economy. The necessity for close relation of vocational education to employment opportunities is not a new concept, but it becomes more important and is increasingly stressed as vocational educators strive to gear their programs to a rapidly changing labor market.

No one can predict with certainty how many and what kinds of employment opportunities will be available at any given time. However, employment trends and projections are useful to administrators who plan and establish vocational education curricula.

The Vocational Education Act of 1963 has provided a structure for the exchange of information between educators and state employment service systems. Under a cooperative agreement, employment offices make available to state and local educational agencies occupational information on present and future prospects for employment both in the state and elsewhere.

In addition to information provided by agencies at state and local levels, the U. S. Department of Labor makes predictions on employment trends and the number of persons who will be seeking jobs. In a study, America's Industrial and Occupational Manpower Requirements 1964-75, the Bureau of Labor Statistics has estimated that the labor force will increase by 1.7 million persons annually for the 11-year period.

One major conclusion of the study is that the overall demand for less-skilled workers will not decline during the 11-year period, although it will decline somewhat as a percentage of the total. More than 3 million additional service workers will be required, and their share of the total number of jobs will go from 13.2 to 14.1 percent. Nearly 2 million more operatives will be needed, while their share of existing jobs will decline from 18.4 to 16.7 percent. The share of farm jobs in the total is expected to decline by 900,000 (mostly among farm owners)--from 16.3 to 3.9 percent. The greatest increase will be in professional and technical occupations, which will require 4.5 million additional personnel--an increase of 54 percent.

Obviously these and other employment trends have implications for overall planning in vocational education. Vocational

educators are emphasizing the necessity of planning programs that will meet employment needs 20 years hence as well as today. They are also keenly aware that students must be trained for a national labor market. Worker mobility is a fact of life, and the well-trained vocational graduate should be prepared to cope with a shifting employment environment (A:294-5).

Advisory Committees and Councils.

Advisory committees and councils have been a traditional means of helping vocational educators to formulate and carry out programs that meet the needs of management and labor. They are now mandatory at the state level and are being increasingly stressed at the local level, and several have been established on the national level.

Under the Vocational Education Act of 1963, state boards for vocational education are required to establish advisory committees. These state committees must include persons familiar with the vocational education needs of management and labor within the state and a person or persons representative of junior colleges, technical institutes, or other institutions of higher education that provide programs of technical or vocational training. Following this pattern, many states have made it mandatory to establish similar advisory committees locally whereever public vocational programs are conducted. Advisory committees at the local level provide a very important communication link between the school and the world of work that is served by vocational education.

There are many types of advisory committees. Some are general in nature and provide overall advice and direction for the total program of vocational education. Others give more specific help in the development of curriculum material, establishment of standards for entrance into vocational courses, assistance in the placement of graduates, recommendation of applicants for training in cooperative part-time programs on the basis of qualifications required by the organization where the student is taught, and many other related activities.

Vocational educators are now recommending the establishment of advisory committees for every vocational education curriculum offered by the school.

Placement and Follow-Up of Graduates.

An important function of vocational education, which also serves as a link between the school and the world of work, is the placement and follow-up of graduates. Through this process the school can validate the vocational education curriculum in light of the graduate's placement and performance on the job. The school is able to keep in close touch with changes in the labor market and the demands of the world of work. This constant communication gives the school information on which to base curriculum changes.

A school-based placement service can also help the student make the transition from school to work; the student depends on the placement service for assistance and counseling in locating the type of job he wants. Research evidence has shown that superior placement and employment performance are achieved by graduates from schools that are involved in school-based placement programs.

"An active placement program can, within limits, serve to offset the effects of general unemployment in an area. In the absence of such programs, placement tends to be largely a function of the general employment services of a region" (D:38).

Occupational Information and Exploration.

Undergirding an effective program of vocational education is the emerging concept of occupational information for all students. Vocational educators believe that the public schools have a responsibility to expose all students to the world of work through meaningful exploratory experiences and realistic occupational information.

A generation ago most youngsters, as parts of their family units, had opportunity for work experience in or near the home. Technology has affected family patterns and eliminated many opportunities for youngsters to perform useful work. The school must now fill the void by providing students with an opportunity to learn about jobs and employment responsibilities.

A laboratory for learning about the world of work exists wherever there are schools. Imaginative educational programs can be built around the myriad of occupations which can be observed daily. Schools must look at their own surroundings and assess the possibilities for teaching students about the working world. When the school performs this function, it will improve the occupational and educational choices of students and help to build dignity and respect for all kinds and levels of employment.

Students should be exposed to the world of work immediately surrounding them, but they must also learn about work beyond the borders of their own communities and states. Chances are very great that as adults they will move their place of residence across state lines and beyond.

A student's understanding of the working world should include the basic idea that preparation is necessary for successful employment. It must be impressed upon him that job opportunities for the unprepared and unskilled are fast disappearing.

Exploratory programs are being developed in the junior high school in order to help students understand work and know something about the varieties and challenges of occupations. It is at this level that many students (approximately one third of all dropouts) leave school before having an opportunity for vocational training. Exploratory programs are designed to give youngsters insights about work which should encourage the completion of a high school program and should inspire them to make plans for a future job (A:298-9).

Organization and Administration.

The administrative structure for public vocational education has developed as a federal, state, and local partnership. Prior to the enactment of the National Vocational Education Act of 1917, a number of cities had developed vocational education programs and some states had enacted laws to provide tax support for vocational programs.

When the first federal act for vocational education was passed in 1917, the State Boards for Vocational Education were created to administer and supervise vocational programs. The law

provided assistance for education in certain occupational categories, i.e., agriculture, home economics, trades and industry, and later, distributive education. The first vocational education programs were designed to serve students at the high school level, but the need for adult training in vocational subjects became so great that many adult programs soon were developed. Even today, the national enrollments in federally reimbursed vocational-technical education programs show that of the 7 million persons enrolled, approximately one half are adults.

Vocational programs operate under a variety of administrative patterns reflecting the viewpoint of local education authorities and state departments of education. Selected programs are state administered; most are operated locally. In general, there are three patterns for providing vocational education through the comprehensive high school: the vocational department in a comprehensive high school, the shared-time vocational center, and the area vocational school program. (The latter two are similar and many times interrelated in practice.)

The comprehensive school serves all of the students in the community. Resources permitting, occupational training may include such fields as business and office occupations, trades, technical work, agriculture, home economics, and distributive education. In the comprehensive high school, students are usually close to home and remain with neighborhood friends and associates throughout their high school careers. Frequently however, the available resources of smaller comprehensive high schools do not permit a broad range of vocational offerings.

The shared-time vocational center used in occupational training. Students come to the center on a part-time basis, and when not at the vocational center, they study related subjects and participate in activities in their local schools. Through this arrangement a student retains identity with his home school. It is possible for several high schools to cooperate in the support of such a center. This type of arrangement has the advantage of lowering the costs for vocational education and making possible a greater variety of occupational training (A:299-300).

EMERGING CONCEPTS IN ORGANIZATION AND ADMINISTRATION

The Area Vocational School.

Area vocational programs are designed to provide vocational education for a broad geographic area. This concept is comparatively new to school organization. Area vocational programs are an effective means of providing many occupational choices to greater numbers of individuals more economically. This administrative approach is a practical and constructive way of meeting some of the special problems of providing adequate resources for vocational education.

Vocational education programs suffer acutely if they are not supported sufficiently, either administratively or financially, to develop the curricula and to equip and modernize shops and laboratories in keeping with current business and industrial practices. In many communities, the physical plants provided for the existing vocational education program have been inadequate to meet the

needs of individuals for training in an ever increasing scope of occupations. In other communities, the student potential has not been large enough to warrant the expenditures needed to construct and equip vocational-technical education facilities to meet the demands for occupational training.

Area programs now in existence reveal diversity of administrative control, financial structure, enrollments, course offerings, and services. They have, however, two outstanding characteristics: they provide training which leads to employment, upgrading, and updating in numerous occupations; and they serve students from more than a single community, school district, or even state. An area program may be established within an existing administrative framework.

An examination of state reports submitted to the Division of Vocational and Technical Education of the U. S. Office of Education for fiscal year 1966 shows that all states have embraced the area vocational concept as part of their plans to expand and improve vocational-technical education (A:302).

The Vocational Teacher.

The preparation and ability of the vocational teacher are key elements affecting the quality of vocational education. Vocational educators are placing renewed emphasis on the recruitment and training of a sufficient number of qualified teachers to meet the demands for vocational instruction in a wide range of occupational areas and educational institutions.

Many vocational teachers are recruited directly from business and industry or the armed forces, while others come to

the field through college courses supplemented by work experience. Because schools must compete with business and industry, which generally have more attractive pay scales and fringe benefits, the demand for vocational teachers has generally exceeded the supply. Recruitment and training programs are, therefore, crucial to the development of vocational education programs at all levels.

Among characteristics that make a good vocational teacher are an occupational skill which has been developed by work experience, demonstrated proficiency in his occupation, college courses in the philosophy of education and in teaching methods and techniques, and the ability to impart realistic knowledge and skills to his students in light of employment responsibilities in the world of work.

The occupational competency of the vocational teacher gives to vocational education a unique quality. The teacher's successful experience on the job makes it possible for the student to more readily identify employers' expectations.

Vocational teachers identify with students through a variety of techniques that result in a closeness and feeling of rapport necessary for the good performance of the student.

Certain techniques have become a part of the process of vocational education, particularly at the high school level. One of these is the practice of home visits, in which the vocational teacher works with the student in carrying out a home project chosen by the student. The project usually involves a phase of the vocational instruction and is built around home or civic improvements, family living, or income-producing projects.

Through this technique the vocational teacher can gain a deeper awareness of the student and his aspirations and strengths, and possibly problems can be identified. Teacher-parent cooperation which may help the student relate classroom instruction to his home and community environment is encouraged.

Income-producing projects supervised by the vocational teacher often provide incentive to the student. He has an opportunity very early in school to gain an understanding of how skill and knowledge relate to producing income. He is also provided with an insight and understanding of the responsibility required for good management.

Cooperative programs (programs providing part-time employment while the student is enrolled in school) are developed by vocational teachers to relate vocational instruction to the occupational training of the student. The vocational teacher provides for the placement of the student in part-time employment, developing with the employer a training plan, observing the student at work, and consulting with the employer and with parents. The teacher also provides classroom instruction that is meaningful to the student's work experience.

Through a variety of club activities, youngsters enrolled in vocational education are given an opportunity to develop qualities of leadership and good citizenship. There are now five national organizations for vocational students--the Future Farmers of America, Future Homemakers of America, Distributive Education Clubs of America, Vocational Industrial Clubs of America (A:304-5).

SUMMARY

Of constant concern to vocational educators has been the notion that admission to college is the only road to success. Schools have tended to perpetuate this myth; it has influenced parents and colored the thinking of counselors. Yet, when faced with the realities, many persons, including students, will agree that college does not offer the type of education that can or should be pursued by the entire population.

"Colleges prepare persons for work in the professional fields, which employ only 15 percent of our total labor force. Studies have shown that students are realistic about the job opportunities available to them upon completion of high school" (C). A gap occurs when there are not sufficient organized training offerings to prepare students for the jobs that exist. In schools with many pressures for programs in an already crowded curriculum, vocational education is forced to compete for its share of attention. Vocational programs suffer when attention is disproportionally concentrated on the other aspects of the school curriculum, especially easily scheduled courses accommodating large numbers at low cost.

Individuals and groups who have been served by quality vocational programs, and who understand their purposes, generally hold strong favorable views about vocational education. Members of organized labor have supported vocational education over the years, and business and many professional groups have looked upon it with favor. Congress and state legislatures have seen its impact and potential value to individuals, to the general welfare, and to the national defense.

TABLE III

THE SCIENCE ENROLLMENT IN
MISSOURI HIGH SCHOOLS
1950- 1965[4]

YEAR	1950	1955	1960	1965
General Science.....	23,022	23,973	29,423	39,150
General Biology.....	14,600	16,387	26,887	40,819
Chemistry.....	3,161	4,281	9,420	15,068
Physics.....	2,497	2,172	4,583	11,056
Acvanced Phys. Science	1,520	1,174	246	
Senior Science.....				
Physical Geology.....			31	
Physiology.....	2,319			
Botony.....			154	191
Zoology.....	26		250	214
Aeronautics.....	42	37		8
Radio			24	
Consumer Science.....	185			
Physical Science.....			2,474	4,685
Advanced Biology.....			234	2,192
Conservation Biology...			62	
Advanced Chemistry.....			103	759
Advanced Physics.....			30	228
Advanced Botony.....			73	

[4] Ibid.

TABLE I

THE NUMBER OF SCHOOL DISTRICTS OFFERING EACH SCIENCE COURSE IN MISSOURI

YEARS	55	56	57	58	59	60	61	62	63	64	65	66
General Science	503	503	497	502	495	491	497	492	491	483	465	455
General Biology	407	403	411	439	438	453	447	475	470	458	461	453
Chemistry	167	169	213	232	268	283	304	311	331	346	334	354
Physics	124	142	150	164	205	211	233	231	242	230	251	252
Advanced Phys. Science	69	66	58	62	77	12						
Senior Science		16	12	12								
Physical Geology	1	1	1		1	1						
Physiology	22	22	22	28	31		16					
Botony	4	3	8	7	7	5	5	11	6	5	4	2
Zoology	5	6	9	7	7	5	6	8	10	9	7	7
Aeronautics	3	3	2	3	3	2	1	1	1	4	1	2
Radio	3	2	2	2	4	2	2					
Consumer Science	1			2	3							
Physical Science						92	117	121	128	135	135	149
Advanced Biology						12	26	24	44	59	81	111
Conservation Biology						2						
Advanced Chemistry						7	11	21	25	33	47	50
Advanced Physics						3	5	13	19	18	21	20
Advanced Botony						3						2

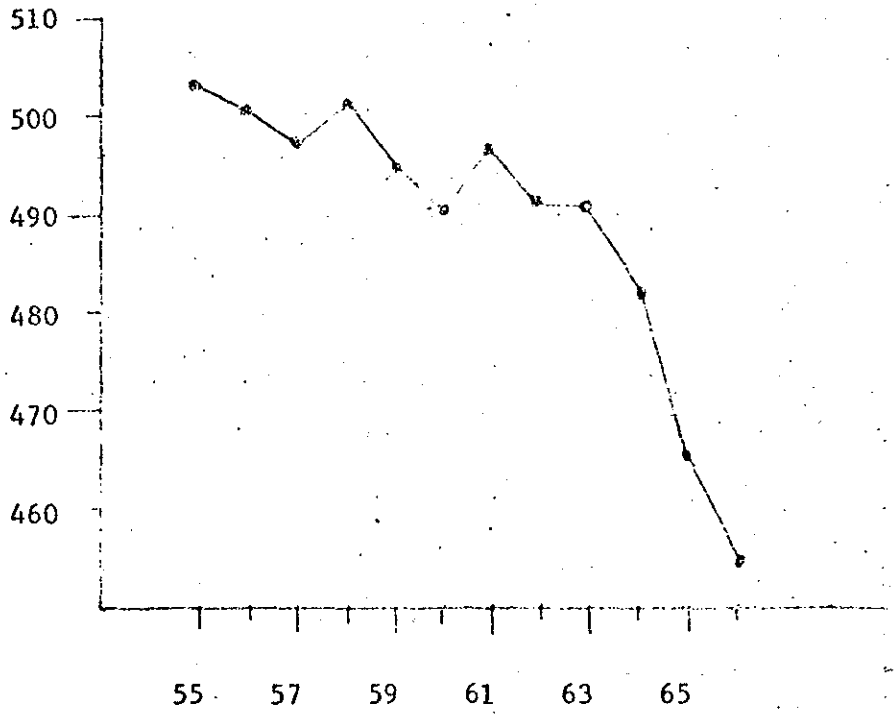
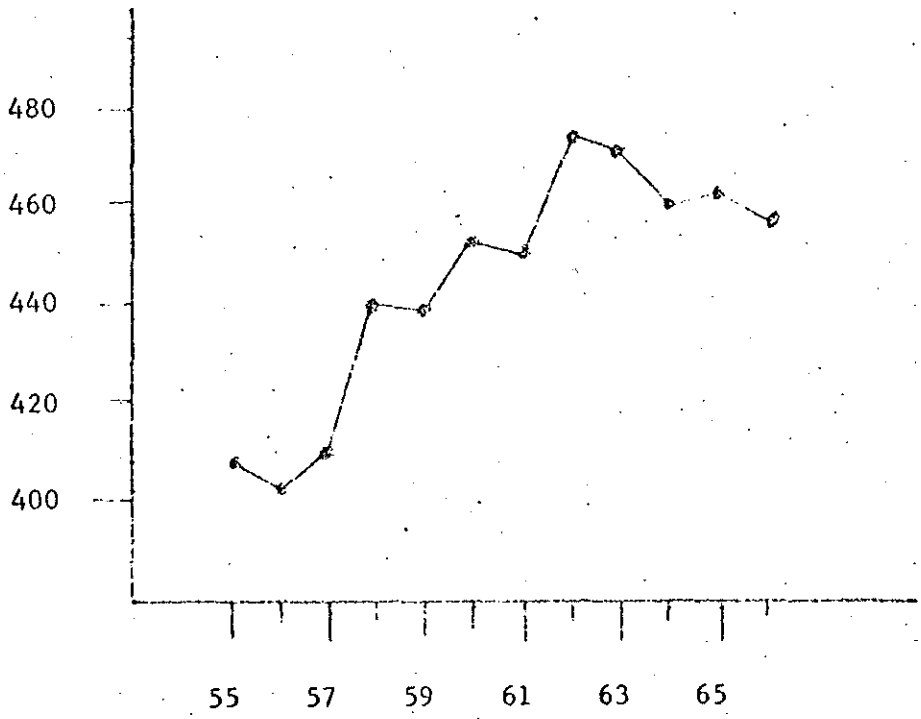


FIGURE II

NUMBER OF SCHOOL DISTRICTS OFFERING GENERAL SCIENCE IN THE STATE OF MISSOURI FROM 1955 TO 1966



FIGRURE III

NUMBER OF SCHOOL DISTRICTS OFFERING GENERAL BIOLOGY IN THE STATE OF MISSOURI FROM 1955 TO 1966

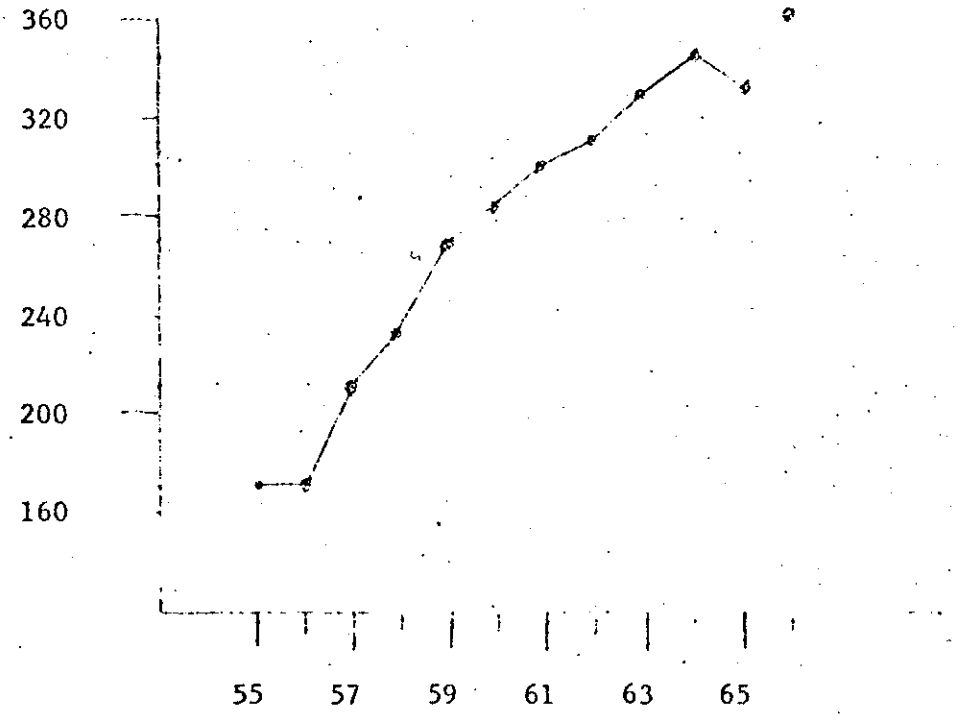


FIGURE IV

NUMBER OF SCHOOL DISTRICTS OFFERING CHEMISTRY IN THE STATE OF MISSOURI FROM 1955 TO 1966

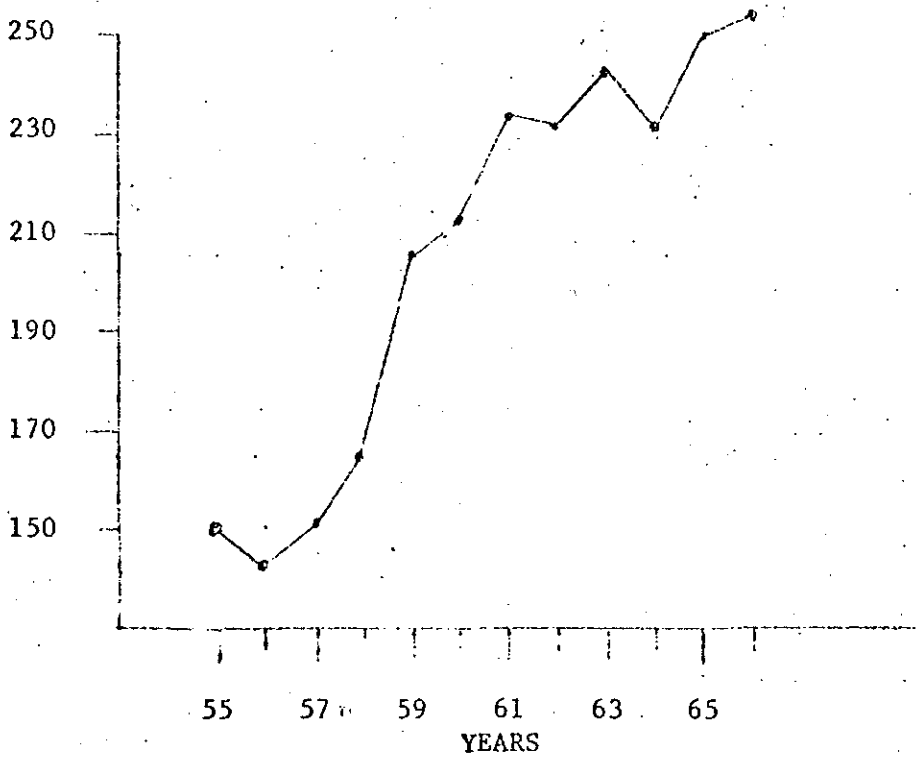


FIGURE V

NUMBER OF SCHOOL DISTRICTS OFFERING PHYSICS
IN THE STATE OF MISSOURI
1955 TO 1966

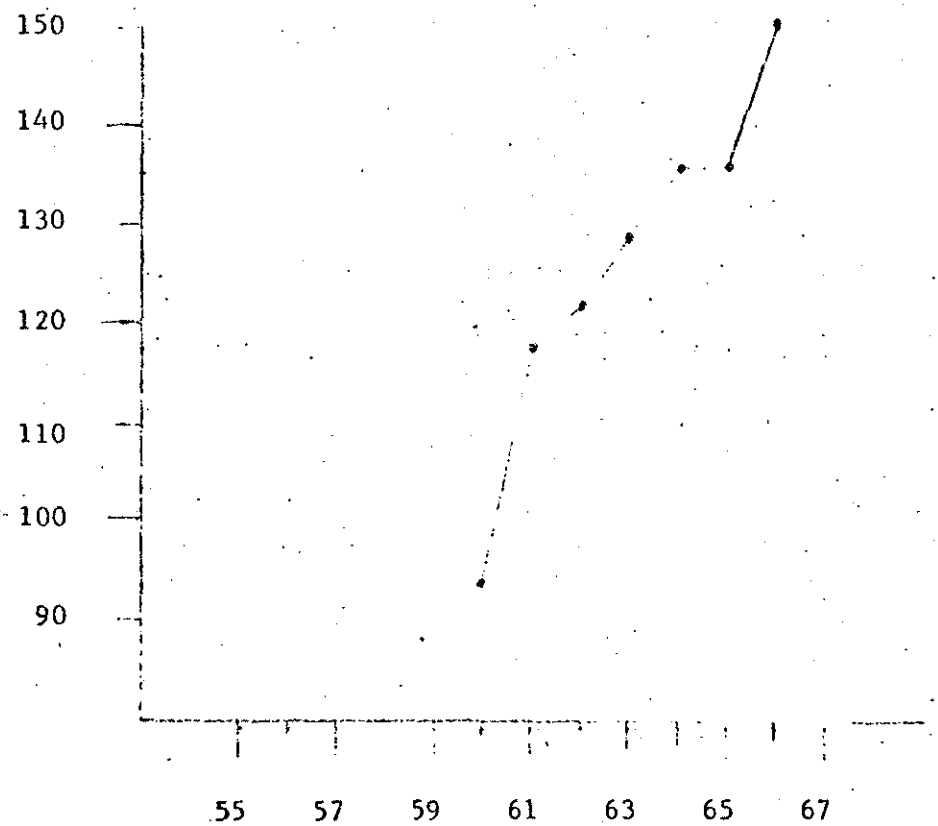


FIGURE VI

NUMBER OF SCHOOL DISTRICTS OFFERING PHYSICAL SCIENCE IN THE STATE OF MISSOURI FROM 1955 TO 1966

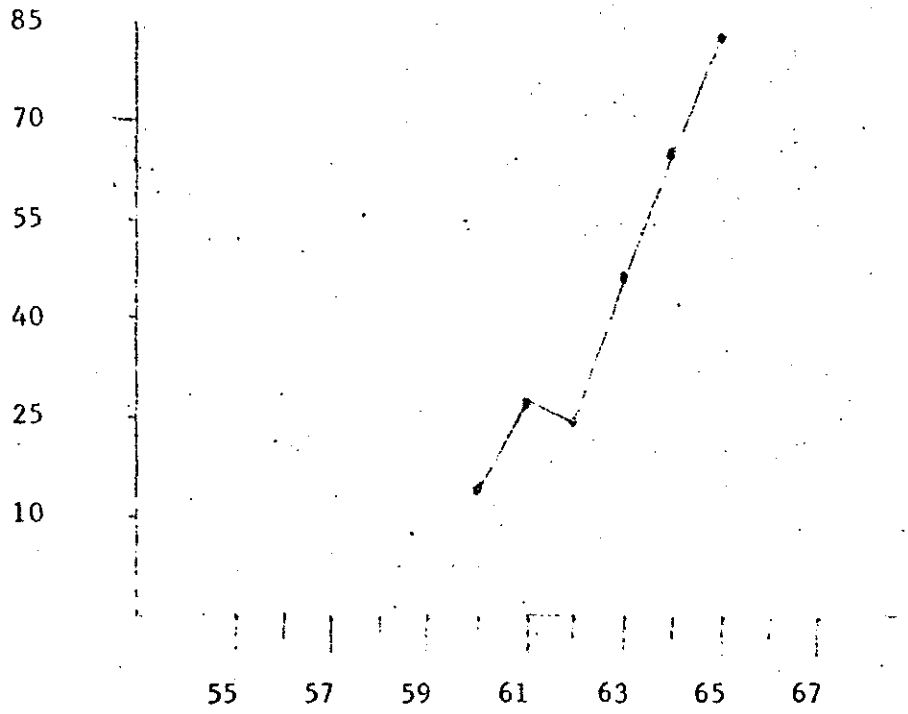


FIGURE VII

NUMBER OF SCHOOL DISTRICTS OFFERING ADVANCED BIOLOGY IN THE STATE OF MISSOURI FROM 1955 TO 1966

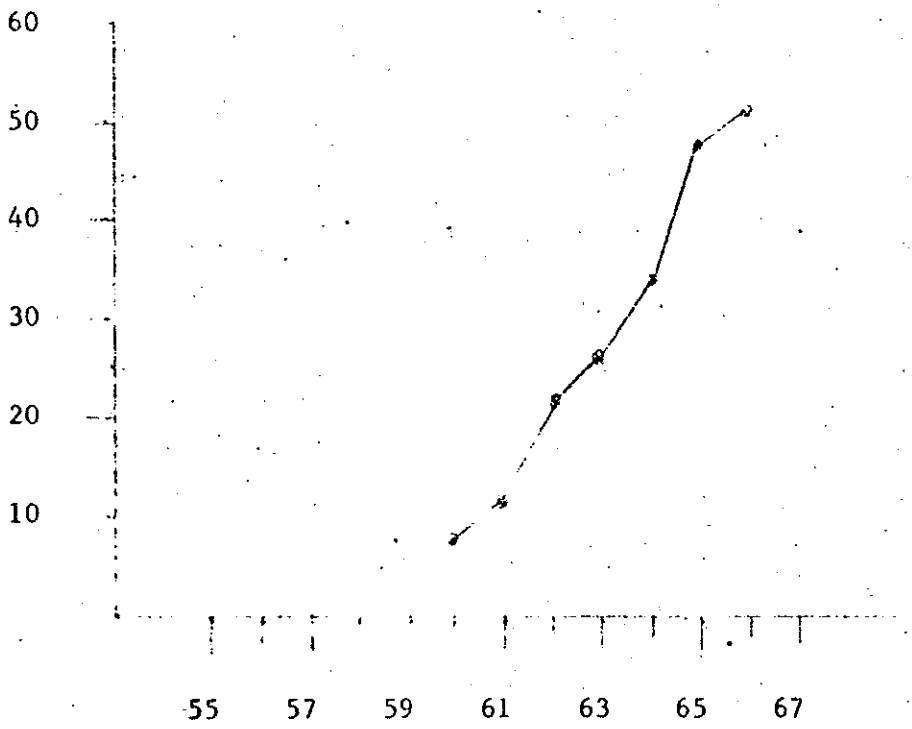


FIGURE VIII

NUMBER OF SCHOOL DISTRICTS OFFERING ADVANCED CHEMISTRY IN THE STATE OF MISSOURI FROM 1955 TO 1966

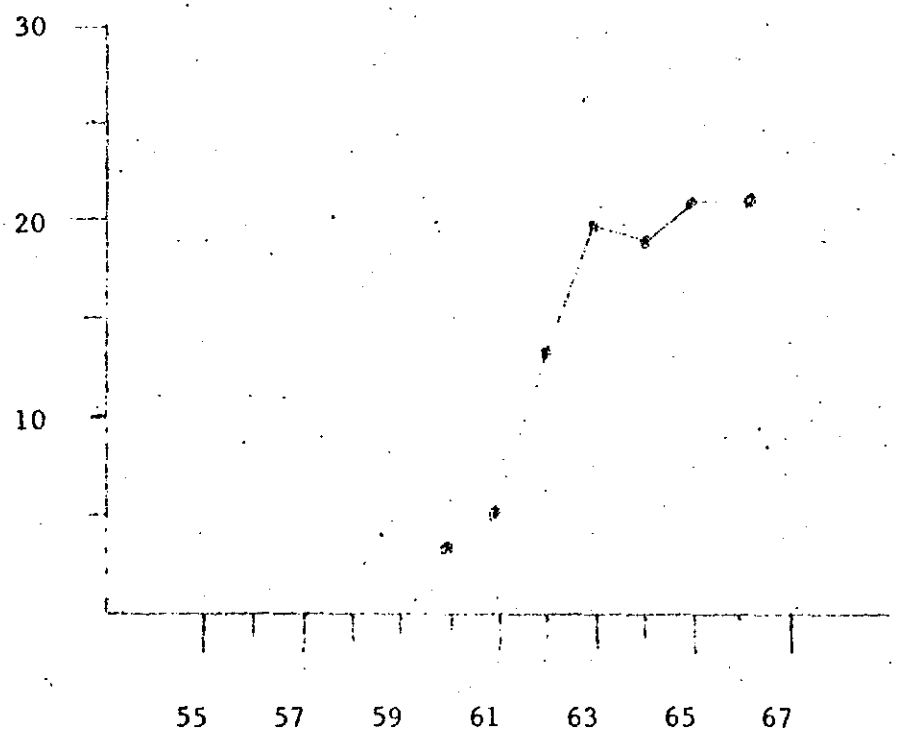


FIGURE IX

NUMBER OF SCHOOL DISTRICTS OFFERING ADVANCED PHYSICS IN THE STATE OF MISSOURI FROM 1955 TO 1966

TABLE IV

THE PERCENT OF SCHOOL DISTRICTS OFFERING EACH SCIENCE COURSE IN MISSOURI

YEARS	55	56	57	58	59	60	61	62	63	64	65	66
General Science	87	87	88	90	90	91	93	93	94	93	92	91
General Biology	70	70	72	79	80	84	83	90	90	88	91	91
Chemistry	29	29	37	41	49	53	55	59	63	66	66	71
Physics	21	25	26	29	37	39	44	43	46	44	49	50
Advanced Phys. Science	12	11	10	11	14							
Senior Science												
Physical Geology												
Physiology												
Botony												
Zoology												
Aeronautics												
Radio												
Consumer Science												
Physical Science						17	21	23	24	26	27	30
Advanced Biology									8	11	16	22
Conservation Biology												
Advanced Chemistry										6	10	10
Advanced Physics										4	5	5
Advanced Botony												

TABLE V
PERCENT OF MISSOURI HIGH SCHOOL STUDENTS
ENROLLED IN SCIENCE EACH YEAR

	1955	1960	1965
General Science	14.9	15.0	15.2
General Biology	10.2	13.7	16.0
Chemistry	2.7	4.8	6.0
Physics	1.3	2.3	4.4
Advanced Physical Science	.7	.1	.
Physical Science		1.3	1.8
Advanced Biology		.1	.9
Advanced Chemistry			.3
Advanced Physics			.1
Other	.2	.7	.3
Percent enrolled in all Science Courses (Total)	30.0	38.0	45.0

RECOMMENDATIONS FOR A DEFENSIBLE SCIENCE PROGRAM

I. ASSUMPTIONS

A. The high schools which meet the following criteria represent the most comprehensive schools in Missouri.

1. AAA classification by the state of Missouri.
2. Membership in The North Central Association of Colleges and Secondary Schools.
3. Student enrollment of at least one hundred students per grade-level.

B. A comprehensive science program is a desirable goal for Missouri public high-schools.

II. RECOMMENDATIONS

1. All normal pupils in grades seven, eight, and nine should be encouraged to study some form of science in each grade. Those students in grades ten, eleven, and twelve should be encouraged to take science if they have sufficient capacity and interest to assure achievement.
2. Scope: The scope of the science program for grades nine-twelve should provide for heterogeneity of student interest, ability, and needs by including courses in: physical science, general biology, chemistry, physics, advanced biology and either advanced chemistry, advanced physics, or both.

3. Sequence: The sequence for grades seven, eight, and nine should include life science, earth science, space science, and physical science. The senior high school sequence should include biological science, chemistry and physics.
4. Accelerated Pacing: The most capable students can proceed at a faster rate in science. For them, the study of science indicated above may be accomplished in less time than indicated so that, in schools of sufficient size, they will be given the opportunity of studying in the twelfth grade advanced physics, advanced chemistry, or advanced biological science, thus making possible advanced placement in science in a college or university.
5. Functional Science: Students not pursuing any of the above sequences in senior high, should be encouraged to take at least a one-year general course in biological, chemical, or physical science that would emphasize functional concepts and practical applications.

SCIENCE RECOMMENDATIONS BY THE NATIONAL ASSOCIATION OF SECONDARY SCHOOL PRINCIPALS AND THE NATIONAL SCIENCE TEACHERS ASSOCIATION

The following recommendations came from a statement representing the best judgement of thousands of secondary school leaders who attended the forty-second Annual Convention of The National Association of Secondary School Principals.[5] The Committee on Curriculum Planning and Development officially adopted the recommendations and the Executive Committee officially approved them, June 10, 1958. The National Science Teachers Association approved these recommendations in 1960.

JUNIOR HIGH SCHOOL-SCIENCE

1. All normal pupils in grades seven, eight and nine should be encouraged to study some form of science in each grade.

2. The amount of time given to science in each grade may be flexible. But enough time-at least three hours per week-should be given to emphasize science as a basic subject.

3. All pupils connot be expected to proceed at the same rate in science. To all extent possible, they should be challenged to accomplish as much as they can. The most capable pupils can complete the existing science program in grades seven and eight in one year. Thus, they can begin the study of advanced science in grade nine, or science normally taken in grade ten.

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[5]The National Association of Secondary School Principals,"The Place of Science and Mathematics", The Bulletin, September, 1958, pp. 5-15.

4. The content of the science program in grades seven through nine will be determined by administrators, subject specialists, and the teachers at the appropriate level. The content may vary according to the ability and aptitude of the pupils.

5. Science study in grades seven through nine should build upon the program of science in the elementary grades. Science for pupils in grades seven through nine should stress areas of science that make greatest impact on their current life and surroundings. In junior high school, more attention should be given to conceptual rather than the descriptive approach to science.

6. Adequate facilities for laboratory experiences appropriate to junior high-school science study are essential.

SENIOR HIGH-SCHOOL SCIENCE

1. The study of science is recommended for those students in grades ten, eleven and twelve who have sufficient capacity and interest to assure achievement.

2. The sequences in this study will include biological science, chemistry, and physics.

3. The most capable students can proceed at a faster rate in science. For them, the study of science indicated above may be accomplished in less than three years so that, in schools of sufficient size, they will be given the opportunity of studying in the twelfth grade advanced physics, advanced chemistry, or advanced biological science, thus making possible advanced placement in science in college or university.

4. In the national interest, it is desirable to offer advanced study in science to capable and interested students regardless of the smallness of the class.

5. Students not pursuing any of the above sequences should be encouraged to take at least a one-year general course in biological, chemical, or physical science that would emphasize functional concepts and practical applications.[6]

VERTICAL ORGANIZATION

The National Committee for the Project on Instruction makes the following recommendation about the vertical organization of the school.

> RECOMMENDATION 23 The vertical organization of the school should provide for the continuous, unbroken, upward progression of all learners, with due recognition of the wide variability amoung learners in every aspect of their development. The school organization should, therefore, provide for differentiated rates and means of progression toward achievement of educational goals.
>
> Nongrading and multigrading are promissing alternatives to the traditional graded school and should be given careful consideration in seeking to provide flexible progress plans geared to human variability.[7]

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[6] Ibid.

[7] The National Education Association, Schools For the Sixties, A Report of the Project on Instruction National Education Association (New York: Mc Graw-Hill Book Company, 1963) p. 78.

APPENDIX I

SURVEY DATA FOR SELECTED HIGH SCHOOLS MEETING ESTABLISHED CRITERIA

School	Number of Course Offerings	Number of Required Courses	Teacher-Pupil Ratio	Total Enrollment
Aurora	4	1	17.5	438
Belton	5	1	19	514
Blue Springs	4.5	1	19.3	648
Elliott	4	1	13.7	419
Brookfield	6	1	17.6	723
Central	6	1	17.0	1219
Carthage	5	1	17	710
Chillicothe	6	1	13.2	737
Clinton	4	1	17.8	437
Hickman	7	1	16.5	1737
Crystal City	5	1	19.7	555
Desloge	5	1	16	345
De Soto	4.5	1	21.5	526
Dexter	4	1	18.4	552
Eldon	4	1	17.4	514
Farmington	4	1	13.9	499
Festus	7	1	13.9	560
Fulton	5	1	18.7	712
Grandview	6	1	20.31	725

School	Number of Course Offerings	Number of Required Courses	Teacher-Pupil Ratio	Total Enrollment
Harrison-ville	4	1	14.3	375
Hickman Mills & Ruskin	8	1	21.9	1877
Higginsville	5	1	17.2	455
Independence & Wm. Chrisman	5	1	21.7	1291
Jackson	4.5	1	17.1	533
Jefferson City	5	1	20.7	1817
Joplin	5	1	18.74	1910
Kahoka - Clark Co. R-I	5	1	19.1	331
Central (KANSAS CITY PUBLIC)	7	2	23.05	2639
East	8	2	21.2	1404
Lincoln	7	2	20,4	1127
Manual and Vocational	5	2	18.2	969
Northeast	7	2	21.8	1369
Paseo	7	2	18.5	1320
Southeast	6	2	22.4	1744
Southwest	6	2	22.4	2467
Van Horn	6	2	22.1	1988
Westport	6	2	21.5	1441
Center	6	1	20.5	1229
Park Hill (Center)	7	1	19.3	847
Kennett	4	1	20.5	737

School	Number of Offerings	Number of Course Courses	Teacher-Pupil Ratio	Total Enrollment
Kirksville	3	1	16.7	604
Lebanon	6	1	16.5	687
Lee's Summit	8	1	19.8	911
Wentworth Military	4	1	17.9	423
Liberty	5	1	20.6	936
Marshall	5	1	20.3	1084
Maryville	4	1	18.0	553
Mexico	6	1	16,8	1179
Monett	5	1	15.4	354
Mountain Grove	4	1	19.6	704
North Kansas City	5	1	19.9	1740
Oak Park	5	1	20.33	1977
Poplar Bluff	6.5	1	18.8	1681
Raytown	6	1	19.3	1478
Raytown South	6	1	13.3	1640
Richmond	6	1	23	789
Rolla	7	1	16.6	723
Sedalia-Smith Cotton	5	1	23.2	1991
Sikeston	7	1	14.7	822
(SPRINGFIELD)				
Central	7	2	16.79	1600
Glendale	7	2	23.1	1973

School	Number of Course Offerings	Number of Required Courses	Teacher-Pupil Ratio	Total Enrollment
Hillcrest	7	2	20.9	1341
Parkview	7	2	21.3	1900
St. Charles (ST. JOSEPH)	7	1	17.5	1636
Benton	4	1	20.6	1105
Central	5	2	23.0	2109
Lafayette (ST. LOUIS)	4	1	21.3	1210
Beaumont	6	1	23.8	2440
Central	5.5	1	22.9	1491
Cleveland	7	1	22.9	2303
McKinley	6.5	1	20.7	1322
Northwest	7.5	1	21.4	1450
O'Fallon Tech.	5	1	18.1	2345
Roosevelt	6	1	22.4	2767
Soldan	6	1	21.2	2440
Southwest	7	1	23.2	2469
Sumner	5	1	20.79	1973
Vashon	5	1	18.5	2078
Affton	5	1	19.4	1037
Chesterfield-Parkway	7.5	1	19.5	1949
Clayton	8	2	11.3	758

School	Number of Course Offerings	Number of Required Courses	Teacher-Pupil Ratio	Total Enrollment
Ellisville-Layfayette	6.5	1	22.0	1196
Eureka	6	1	18.9	530
Florissant-Hazelwood	6	1	18.1	2512
Florissant-McCluer	7	1	18.1	3427
Jennings-Fairview	4	1	15.03	343
Jennings-Jennings	6	1	15.5	481
Kirkwood	7	1	19.6	2222
Maplewood	5	1	19.5	891
St. Ann-Pattonville	8	1	19.2	2229
Horton Watkins-Ladue	8	2	14.9	1388
Lindbergh	6	1	19.5	1859
Mehlville	7	1	18.3	2091
Normandy	7	1	19.6	2513
Riverview Gardens	5	1	20.8	1319
University City	7	1	18	1961
Union	4	1	20.5	804
Warrensburg	5	1	16.26	506
Washington	7	1	17.5	814

School	Number of Course Offerings	Number of Required Courses	Teacher-Pupil Ratio	Total Enrollment
Webb City	6	1	18.6	560
West Plains	4.5	1	17.7	800

APPENDIX G

CHAPTER IV

THE STATUS OF SOCIAL STUDIES PROGRAMS IN MISSOURI PUBLIC HIGH SCHOOLS

Certainly any change or revision of the social studies curriculum in Missouri high schools must involve a study of the existing program. If decisions regarding the new curriculum are to be effective and realistic, accurate data must be available concerning course offerings, content of courses, and current practices and trends which are being employed.

The research conducted by Fred H. Wood represents a comprehensive study of social studies education in the public high schools of Missouri. It is particularly relevant to this position paper because it is current (1966) and it provides needed information with regard to (1) present course offerings, (2) the changes that have occurred in social studies curricula during the five-year period from 1960-61 through 1965-66, (3) pre-service and in-service training of social studies teachers, and (4) instructional methods and media used by social studies teachers.[6]

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[6] Ibid., p. 7.

Before examing the findings of Wood's study, it is important to note the following social studies curriculum requirements set forth by the state of Missouri:

> Missouri law requires that high school students earn at least three units in social studies in grades nine through twelve. The three required units must include the study of citizenship (including personal, community, and national problems), world history (including world problems), and American history (including American government).[7]

The following information is a summary of those findings of Wood's study which have particular relevance to this position paper:

> Present Course Offerings. The most popular course offerings in Missouri high schools were World History, American History, and Citizenship; all three were offered by over ninety-eight per cent of the 164 sampled high schools.[8]
>
> Contemporary Issues, Economics, Geography, Psychology, and American Government were other courses offered in at least one-half of all these high schools. The courses offered least often in each high school classification were International Relations, Missouri History, and Family Relations.[9]
>
> Grade Placement and Requirements. The grade placement of courses noted most frequently were Citizenship in grade nine, World History in grade ten, and American History in grade eleven. The greatest number of courses were offered in grade twelve.[10]

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[7]Missouri State Department of Education, The School Administrators Handbook (Columbia, Missouri: Kelly Press, Inc., 1961), p. 113.

[8]Wood, op. cit., p. 265. [9]Ibid.

[10]Ibid.

The three courses most frequently required for graduation were Citizenship, American History, and World History (in 93 per cent of the schools). Urban schools required their students to take significantly more social studies units before they graduated than did the rural or suburban schools.[11]

Electives. Economics, Contemporary Issues, Sociology, Geography, and Psychology were the most common elective courses found in Missouri high schools. Other courses frequently offered as electives were American Government, Family Relations, Missouri History, and International Relations. The average number of electives found in both urban (5.23) and suburban (6.27) high schools was significantly greater than the average number of electives found in rural high schools (3.81).[12]

Course Changes, 1960-61 to 1965-66. Approximately two-thirds of all high schools sampled had changed their social studies curriculum in the five-year period between 1960-61 and 1965-66.[13] During this period, twenty-four course titles and a total of 172 courses were added to Missouri social studies programs. The most common course additions were Contemporary Issues, Economics, Geography, and Sociology.[14] Futhermore, over eighty-seven per cent of the additions were offered in grade twelve, and the majority of the course revisions occurred in social science subjects other than history. The most common deletions were psychology and Missouri History.[15]

Changes in Subject Content. Newer topics incorporated within existing courses revealed an important but less apparent curriculum change. Of the twenty-nine newer subject matter topics examined, the ones most frequently treated in all Missouri social studies courses were, in rank order, current events, communism, the United Nations, and the U.S.S.R. Other popular topics were world peace and international understanding, comparative governments, the changing American culture, civil rights, international relations, labor-management relations and foreign trade.[16]

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[11] Ibid. [12] Ibid., p. 266. [13] Ibid., p. 269.

[14] Ibid., p. 270. [15] Ibid., [16] Ibid., pp. 271-274.

Organization and Focus of the Study of the Social Studies Program by Local High Schools. Data compiled for the 1965-66 school year showed that 43.9 per cent of the 164 high schools in the survey were engaged in the process of examining and/or changing their social studies curricula. It was also indicated that more urban and suburban than rural high schools were studying their curricula.[17]

Of those high schools which were engaged in a study of their program, over half were concentrating on particular curricular problems in their schools and/or considering a change of textbooks. The majority of urban and suburban high schools were concentrating on particular problems in their schools while the greater proportion of rural schools were concentrating their efforts on changing textbooks.[18]

Instructional Methods. The instructional methods most frequently used by social studies teachers in high schools of Missouri are teacher-centered, i. e. question-answer recitation, teacher-led class discussion, and lecture.

Newer instructional methods (student-teacher planning, programmed textbooks, large-group instruction, small-group instruction, independent study, and problem-solving) and instructional media (teaching machines, programmed textbooks, and educational media) are not frequently used by social studies teachers in high schools of Missouri.[19]

Conclusions from the Missouri Study. While the data presented reveals that curricular change in Missouri high schools has been occurring during the period from 1961-65, it is apparent that the changes consisted primarily of additions to existing course offerings and some inclusion of new content. Moreover, the most common course offerings,

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[17] Ibid., p. 274. [18] Ibid., P. 276. [19] Ibid., p. 294.

requirements, and their grade placement were identical to the 1916 recommendations of the Committee on Social Studies on the Reorganization of Secondary Education.

Wood, in his conclusions, stated that "rarely do the high schools of Missouri undertake intensive curriculum development projects which entail an entire, revision of their social studies programs."[20] Yet, if the recommendations from the national curriculum projects are to be followed, it will be necessary for schools to do just that. Furthermore, the implications from this study are that a revision of the social studies curriculum must involve more than a reshuffling of courses and content. Serious attention must be focused on newer methodology, content, instructional media, and the pre-service and in-service preparation of social studies teachers.

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[20] Ibid., p. 292.

CHAPTER V

EMERGING TRENDS IN SOCIAL STUDIES

The preceding summary of the status of social studies education in Missouri high schools indicates a need for restructuring the curriculum. One of the most difficult tasks is to determine the direction of this revision. What are the basic characteristics of a good social studies curriculum? What are some of the trends which can be identified that are common to the current curriculum projects? How can the fundamental elements and trends in these social studies projects be developed into a desirable model for a comprehensive high school?

A major problem confronting the social studies teacher and curriculum specialist today is the search for a common core of social studies concepts and skills that can be developed into some type of logical sequence and grade placement in the curriculum. Basically, that is the primary objective of this position paper--to develop what can be considered a defensible social studies program in grades 9, 10, 11, and 12.

Perhaps the most encouraging trend in the revision of social studies programs are the special curriculum projects which have been initiated by the National Council of Social Studies, the United States Office of Education, and other

private groups and foundations. However, as encouraging as the findings of these experimental curriculum projects may seem, there are certain weaknesses in applying the results of these studies.

In the social studies area especially, the problem of arriving at a recommended curriculum presents an extremely complex problem because of the diversity of programs. This is illustrated in the following comment by Fred T. Wilhelms:

> At one level there is tremendous ferment for the sweeping social studies reorganization we have to have. More than 40 curriculum projects are at work. They offer a great range of organizational schemes and instructional materials. But much as one hates to argue against the riches of diversity, the fact is that their efforts are badly scattered and fragmented. No one group, no one set of ideas, has yet emerged into the commanding position it would need in order to effect so fundamental a change.[21]

This same conclusion was arrived at by Fenton and Good in their appraisal of the progress of the social studies projects:

> They are organized in a variety of ways. The majority are located in universities with one or more faculty members in charge; a few are controlled by organizations of scholars such as the American Anthropological Association; others are run by school systems, groups of universities, or independent non-profit corporations such as Educational Services Incorporated. Their objectives are as varied as their structures. Some projects aim to turn out materials for one course

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[21]Fred T. Wilhelms, "Which Way to A Curriculum for Adolescents," NEA Journal, 56:14, December, 1967.

> in one discipline; others are preparing units of materials which can be incoporated into existing courses; the majority propose to develop entire curricula or to isolate the principles on which curricula can be built.[22]

From these comments, it is evident that the current projects are concerned with many segments of the total social studies program. Moreover, a recent report of the National Council for the Social Studies reveals that although many of the projects are still in midstream, it is clear that diverse and contradictory recommendations will be forthcoming.[23]

How will schools implement these various recommendations from such diverse programs? Somehow there must be a defensible and manageable organization of the recommendations. Personnel charged with responsibility of curriculum construction must formulate a coherent basis for selecting from the various proposals those elements that will contribute to the development of a balanced, functional social studies program for their particular situation.

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[22]Edwin Fenton and John M. Good, "Project Social Studies: A Progress Report," Social Education, 29:206, April, 1965.

[23]Dorothy M. Fraser and Samuel P. McCutchens (ed.), Social Studies in Transition: Guidelines for Change. A curriculum bulletin of the National Council for the Social Studies (Washington: National Council for the Social Studies, 1965), p. 1.

Current Trends. Although there is a great deal of diversity among the national experimental programs in social studies, certain common characteristics and trends are emerging. The identification of these trends provides a basis upon which to formulate approaches and materials that could be developed into a new curricular structure. Dorothy Fraser, Coordinator of Social Science, Hunter College, lists these trends as follows:

> (1) The search for a conceptual framework. In many of the projects the first step in curricular planning has been to formulate a conceptual or ideational framework for the total K-12 program or for a particular segment on which the project is focused. Such a curriculum plan would encourage students to seek and discover relationships among the facts they study and use those facts to build concepts and generalizations for themselves.[24]
>
> (2) An increased emphasis on sequence. An effort is being made to develop a hierarchy of experiences and topics, all related to a concept or generalization, and leading from the simple to the complex.[25]
>
> (3) New views of readiness. By providing "predisposing" experience and capitalizing on the broader background that modern youngsters build through experiences such as television viewing and travel, it is urged that children can be helped to develop readiness for many social studies learnings at an earlier age than was formerly believed. This has brought about recommendations for including more content, more mature topics, and a more advanced treatment of skills at each grade level.[26]

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[24]Dorothy M. Fraser, "Status and Expectations of Current Research and Development Projects," Social Education, 29:421, October, 1965.

[25]Ibid. [26]Ibid.

(4) The thrust of the behavioral sciences. The newer behavioral sciences--economics, sociology, anthropology, social psychology, and certain neglected aspects of political science--are challenging the dominance of the history, geography, and the elements of civics in the new curriculum. This trend is strong because insights and materials from the behavioral sciences are critically important in gaining a realistic picture of today's society and its problems.[27]

(5) Emphasis on depth studies instead of surveys. There is a strong movement away from surveys that are repeated in cycles at various grade levels. Intensive study of a limited number of topics in each school year is recommended.[28]

(6) A comprehensive world view. Non-western cultures are receiving increased attention--a move away from the traditional emphasis on the United States and western Europe. Many projects have planned area studies dealing with the peoples of Asia, Africa, and Latin America for intermediate and secondary grades.[29]

(7) Study of society's unresolved problems, both domestic and international, is a major focus of projects (e.g. race relations civil rights, communism, and international conflict).[30]

(8) Instruction based on inquiry. In developing new course materials, emphasis is placed on developing teaching strategies that encourage students to arrive inductively at concepts and generalizations, and to develop skill in analysis.[31]

(9) Many kinds of multi-media learning materials and procedures are used as a result of inductive learning demands. Many project materials consist of collections of data, including case studies, reproductions of documents, tapes, facsimiles of artifacts, pamphlets and paperback series, films, still pictures, transparencies, etc.[32]

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[27] Ibid. [28] Ibid., p. 424. [29] Ibid. [30] Ibid.

[31] Ibid. p. 425. [32] Ibid.

(10) A climate of experimentation and innovation is being created in the social studies by the variety of curriculum projects. This climate is essential for improvement in programs.[33]

(11) Social scientists and educators are working together. A team approach, involving the cooperative efforts of social scientists, scholars in professional education, and teachers and administrators, is being used in most of the special projects.[34]

While a detailed discussion of these trends is not possible within the scope of this paper, the overview presented does provide a clearer understanding of the direction of the new social studies. Moreover, the major emphasis present in the social studies is a basis for attempting to synthesize main ideas and concepts for a defensible program.

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[33] Ibid.

[34] Ibid.

CHAPTER VI

SUGGESTED CHARACTERISTICS AND GUIDELINES FOR DEVELOPING A SOCIAL STUDIES CURRICULUM

Two major questions confront educators as they attempt to structure and implement a curricular design based upon the new trends and recommendations. The first question involves an analysis of the basic characteristics of a desirable social studies curriculum which any design should accomodate. Secondly, and more difficult to solve, is the question of the content to be selected. Someone must select the content to be taught and must organize it for teaching purposes. The criteria used for this purpose is extremely important, for it will actually determine the nature and scope of the social studies program.

Although there are a number of statements written concerning these two major questions, the information provided by the National Council for the Social Studies represents, perhaps, the clearest and most concise statement on the problem.

In a recent bulletin of the National Council for the Social Studies, Raymond H. Muessig identifies the following characteristics of a good social studies curriculum. It is noted that the characteristics are not stated as specific objectives; rather, they are stated in terms of the general

philosophy and functions for developing a program:

> (1) The social studies curriculum must reflect the nature and needs of our democratic society and the world in which our children and youth live.
>
> (2) The social studies curriculum should provide for both the general and specific needs, stages of growth and development, interests, aspirations, and abilities of children and youth.
>
> (3) The social studies curriculum needs to be as faithful as possible to the purposes, theories, discoveries, insights, major ideas, methods, tools, and materials of the social sciences in general, various combinations of two or more particular social sciences, and individual academic disciplines found under the social science aegis.
>
> (4) The social studies curriculum ought to be based upon rigorous criteria for content selection.
>
> (5) The social studies curriculum should achieve some balance and blending in the development and utilization of understandings, skills, attitudes, and appreciations.
>
> (6) The social studies curriculum must be both ordered and expansive in its make-up.
>
> (7) The social studies curriculum ought to be shaped around a series of imperative, consistent, and persistent ends, while leaving room for a variety of means suited to the realization of these ends.[35]

Realizing the needs of teachers and curriculum specialists to have a basic set of criteria for selecting

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[35]Raymond H. Muessig (ed.), Social Studies Curriculum Improvement: A Guide for Local Committees, Bulletin 36, (Washington: National Council for the Social Studies, 1965), p. 15-27.

content, the Council published in 1965 a special bulletin,[36] Social Studies in Transition: Guidelines for Change.[37] This report attempts to set forth the central purposes and values of American society, stated as 15 themes; each theme a goal of our democracy.

The following topical outline of the 15 themes suggests the content included in new programs from kindergarten through grade twelve:

A Guide to Content in the Social Studies

Theme 1. Recognition of the Dignity and Worth of the Individual

Theme 2. The Use of Intelligence to Improve Human Living

Theme 3. Recognition and Understanding of World Independence

Theme 4. The Understanding of the Major World Cultures and Culture Areas

Theme 5. The Intelligent Uses of the Natural Environment

Theme 6. The Vitalization of Our Democracy Through an Intelligent Use of Our Public Education Facilities

Theme 7. The Intelligent Acceptance, by Individuals and Groups, of Responsibility for Achieving Democratic Social Action

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[36]The current publication is a revision of an earlier bulletin published in 1962, National Council for the Social Studies, A Guide to Content in the Social Studies (Washington: National Council for the Social Studies, 1962).

[37]Fraser and McCutchen, loc. cit.

Theme 8. Increasing the Effectiveness of the Family as a Basic Social Institution

Theme 9. The Effective Development of Moral and Spiritual Values

Theme 10. The Intelligent and Responsible Sharing of Power in Order to Attain Justice

Theme 11. The Intelligent Utilization of Scarce Resources to Attain the Widest General Well-Being

Theme 12. Achievement of Adequate Horizons of Loyalty

Theme 13. Cooperation in the Interest of Peace and Welfare

Theme 14. Achieving a Balance Between Social Stability and Social Change

Theme 15. Widening and Deepening the Ability to Live More Richly[38]

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[38]Ibid., pp. 11-52.

CHAPTER VII

A DEFENSIBLE SOCIAL STUDIES CURRICULUM FOR MISSOURI COMPREHENSIVE HIGH SCHOOLS

The proposed social studies program presented in this chapter represents an effort to analyze prominent social studies trends and develop from these trends guidelines for a defensible social studies program. The suggested program provides a general course framework from grades nine through twelve but does not include detailed content recommendations. It does incorporate the findings of noted scholars and applies established knowledge of the teaching and learning process in an attempt to meet the needs of American society in the late 20th century.

In reviewing the findings of the National Council of the Social Studies and the many social studies projects, this committee supports a program proposal paralleling the recommendations of Dorothy M. Fraser, a recognized leader in the social studies field.

Basis for Grade Placement

The grade placement proposal is based upon the following factors and assumptions:

1. If effective cumulative development can be built into the K-12 program, students at every grade will be able to perform at a higher level than is expected.

2. In every school year, social studies will include both organized curriculum units and a flexible segment devoted to current affairs and special interests that arise from the students' immediate experience. Within the flexible segment, current affairs will assume larger proportions as the student grows into the secondary grades. This proposed grade placement indicates only the organized curriculum units.

3. A systematic plan for teaching skills should be implemented from the kindergarten through the secondary school, emphasizing problem-solving.

4. From the earliest school years there should be attention to "how we know"--methods of inquiry of social scientists and historians--at a level appropriate to the child's maturity.

5. There are two major bases for organizing knowledge, and students should have experience with both in the course of their K-12 social studies work. One basis is problem-centered and interdisciplinary. The other is subject-centered, or stresses the separate disciplines.

6. While legislative requirements must be taken into account in proposing grade placement of American history and government, these requirements do not demand the placement that has become traditional.

7. In the secondary school, a breadth and depth of content not now found in many school curriculums is needed.[39]

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[39]Fraser and McCutchen, op. cit., p. 56-57.

Proposed Grade Placement of Social Studies Courses

Grade 9. American Studies - History, Civics and Economic Life of the U. S., Including State and Local Aspects. (A two-year sequence for grades 8-9).

A. Historical treatment to be organized chronologically.

B. First year (Grade 8) to stress an exciting narrative of the period through the Civil War and Reconstruction.

C. Second year to deal with period since 1876 and would stress:

1. Economic and technological growth
2. Urbanization
3. Cultural developments
4. Foreign affairs
5. Operation of our political system

D. Civic materials to be treated in terms of the functions of government and citizens' responsibilities.

E. Economic concepts to be woven in as appropriate.[40]

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[40] Ibid., p. 58.

Grades 10-11. Cultures Of The World - A Two-Year Sequence Focused on the World Outside the U.S., Including both Western and Non-Western Cultures.

A. Sequence to be developed with the first semester devoted to the development of Western civilization.

B. Remaining three semesters given to the study of selected cultures such as:

1. U.S.S.R
2. A society representative of the Arab world
3. India
4. An Eastern Asia culture
5. An emerging African nation

C. The selection of units dealing with Western European Cultures would depend to some extent on emphasis in the first semester of study.

D. In schools where the two-year sequence is not practical, the following program might be implemented:

Grade 10 - World Geography, organized around culture areas.

Grade 11 - World History, organized chronologically.[41]

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[41] Ibid.

Grade 12. Problems Of The Modern World - (to include both domestic and world problems).

A. An interdisciplinary study of such problems as:

1. Democracy vs authoritarianism
2. Competing economic systems
3. Government and economic life in the United States
4. Population problems
5. World resources and trade
6. International organizations and world affairs

B. Units focused on domestic problems to include relevant backgound from U.S. history and government.

C. Electives (specialized) - A number of advanced courses, most of them one-semester, should be available for senior high school students who have demonstrated their interest and potential ability for social science study. These may include:

1. Geography
2. International relations
3. Social psychology
4. Economics[42]

D. Electives (general) - In addition to the more specialized courses other electives should be offered to meet the needs and interests of students who have a general education objective. These electives would consist of such courses as:

1. Consumer Economics
2. Marriage and the Family

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[42] Ibid.

APPENDIX H

CHAPTER III

RECOGNIZED PROFESSIONAL OPINIONS

A. The author of this paper went to the Department of Education in Jefferson City and found out that the Communicative Skills and Foreign Language sections of the curriculum are not presently being revised and updated. Copies of "A Guide for Foreign Languages", 1963 edition, and "A Guide for Language Arts, Grades 10-11-12", 1959 edition, were secured and studied quite thoroughly. The reader is specifically referred to page 53 of the latter "Guide" which strongly urged at the time the material was written that a fourth unit-- ..."not only for college preparatory students but also those who are going out into business or homemaking upon graduation."-- be required in addition to the present three units. This author is recommending this again at a later point in this paper and is using the quote as a means of support.

B. A personal interview with Dr. Ben F. Nelms, Assistant Professor of English and Education, University of Missouri, at 2 P.M. on Tuesday, January 16, 1968 at which time Dr. Nelms expressed the following opinions:--

1. Dr. Nelms would support the idea of naming the different Language Arts courses differently and assigning them a different course number so that colleges and anyone else looking at a High School transcript would be better able to interpret the intended meaning of the class mark.

Primarily this would amount to a "tracking" program. Dr. Nelms stresses that the tracking should be on a voluntary basis on the part of the students involved insofar as is possible.

2. There is apparently a trend toward more electives in the language arts area of study and this trend is in the right direction. An example was cited in Riverside, California where as many as 28 electives were being used. Frequently these electives are a semester in length and could be on a nine week basis if desired. There would still be a full year of Language Arts required of each student each year of high school but it would be his choice of course.

3. Professor Nelms would also require of all students at least one semester of Speech.

4. He would also like to see English and Speech re-united into one course.

5. There should be more independent study and reading on the part of all students with the time and space for such work.

6. There should be well organized remedial courses where and when the need presents itself. A better method is developmental reading in each course as the need arises.

CHAPTER IV

RECOMMENDATIONS FOR "A DEFENSIBLE COMMUNICATIVE SKILLS PROGRAM FOR A COMPREHENSIVE HIGH SCHOOL IN THE STATE OF MISSOURI"

Based upon the preceding information, the following position will be taken in relation to the Communicative Skills section of the seven general secondary areas described in the content outline of this paper.

POSITION #1.--Language Arts I*, II*, III*, IV (*required) will remain the same but with the following modifications or options:

A. Language Arts I will be designed primarily for grade nine. A district may petition the State Department of Public Instruction for permission to offer three separate and completely different types of course content.

Language Arts Ia. =One type would be traditional English designed primarily for college bound students who definitely know they are going to college. No petition would be required of the district to offer this course.

Language Arts Ib. =A second type would be described and justified by the district in the petition previously mentioned in "A" above. This course would be geared primarily to the potential skilled craftsman, potential vocational or technical school entrant, potential farmers, terminal students, and similar students. (The school would justify the student being able to profit from this

type of instruction.) It is apparent that much material is either already on the market, or soon will be, to make it possible to adequately meet the course content needs of students needing this type of English. The State Department is urged to refuse all petitions for "watered down" regular or traditional courses. It is also recognized that many districts offer courses similar to that being described as options under this part of the"position paper", however, there is total confusion and disorganization as to what the various course content is from district to district as well as to what a grade on a certain Language Arts course really means. Part of the purpose of this paper is to recommend a change so that all involved will be talking of the same thing when discussing any segment of the Language Arts program.

There should on the other hand be enough basic English included so that a student beginning his high school studies in this course would be able to make a transition to a college bound course in grade ten if his performance and interests make this seem advisable.

Language Arts Ic. =A third type of English I would be for educationally mentally handicapped students. This program would be arranged through petition as above and would only be approved if designed to meet the needs and interests of those officially designated

"Educable Mentally Handicapped". It is assumed at this point that local school districts of all types would be jointly working together on programs for "Trainable Mentally Handicapped" as well and therefore this subject will not be in need of discussion as a part of this paper. All districts will offer this course "Ic" within three years of the adoption of these recommendations.

B. Language Arts II will be primarily for grade ten. (It is recognized that there may be exceptions as to grade placement of individual students due to circumstances within the district concerned.) Again, a district may petition the State Department of Public Instruction to offer three or more separate and completely different types of course content.

Language Arts IIa. =The first grade ten course content would be traditional English primarily designed for the college bound students who are either sure they plan to attend college or are being counselled into college preparatory work voluntarily. No petition would be required for this course to be offered.

Language Arts IIb.=The second type of offering would be described and justified by the district wishing to offer the course through the procedure of petition

as described above. One additional position will be taken over that in grade nine English. Offering a vocational, technical, and/or non-academic bound English course will be required of all districts at grade ten level. A reasonable period of about three years from the date of the adoption of the content of this paper will be allowed for all districts to comply with this requirement. The course content will be designed as a continuation of grade nine content under Language Arts Ib above or in the case of the district not offering this type of course at grade nine, it will be designed as the first course of this type. Appropriate methods, materials, and content will be so analyzed when the petition is presented for approval that reasonable assurance of success is probable.

Language Arts IIc. -The third type of offering will be designed for Educable Mentally Handicapped. This course can be a terminal type program for those who are older in chronological age but should be a continuation of grade nine Language Arts Ic. All districts will offer this course in the school year following the adoption of these recommendations. Again, provision for Trainable Mentally Handicapped should be dealt with on an area basis larger than most school districts in

the state and would therefore not be a subject for this section of this paper.

C. Language Arts III will be primarily for grade eleven. A district may petition the State Department of Public Instruction for permission to offer three separate and completely different types of course content.

Language Arts IIIa. =The first course would be for grade eleven college bound students and would not require a petition for approval.

Language Arts IIIb. =The second type of course would be for vocational, technical, farm and other students not wishing to attend academic college. All schools would implement this course within a reasonable period of time not to exceed two years from the adoption of the recommendations in this position paper.

Language Arts IIIc. =A continuation of the Educable Mentally Handicapped course offering would be petitioned and should be implemented two years following the adoption of these recommendations.

D. Language Arts IV is designed for grade twelve. A district may petition the State Department of Public Instruction for permission to offer a grade twelve English course or courses as follows.

Language Arts IVa. =Traditional grade twelve English will be offered by all schools but not required of a student to take. There is no petition required by a district to offer this course and it should be designed for those students knowing or who are reasonably sure they will go on to college. However, no student who has been in the vocational type English program will be excluded from this course simply because he has been in Ib, IIb, IIIb as described above. The content and approach should be pretty much independent of traditional English Ia, IIa, IIIa as outlined above. It is the author of this paper's opinion that <u>all</u> seniors should be required to take a literature course appropriate to their abilities and numbered IVa, IVb, IVc and so forth as at grades nine, ten and eleven. There is sufficient evidence to indicate that with proper content and approach, <u>all</u> students benefit from an appropriate course in Literature.

Additional Language Arts Courses--Additional English courses may be approved at any grade level upon receiving a petition for any special justifiable purpose where materials, adequate staffing, and students are available. This could be in the fields of remedial work, vocational, special education, working with non-English-speaking peoples, working with under-privileged or other special situations. Courses such as "Remedial Reading",

"Remedial English" and "Communicative Skills" will be approved following properly establisned petitioning procedure. It is not to be assumed that all schools must offer remedial courses regardless of the need.

SUMMARY

Any course or variation thereof may be petitioned for permission to offer same in the Comprehensive High School: however, this must be over and above the general required courses Ia, IIa, IIIa, and must be adequately planned, staffed and supplied. Annual reports of progress on petitioned course offerings will be submitted to the Department of Public Instruction until the Department is satisfied as to the merits of the program. Usually three such annual reports will be sufficient to ascertain the merits of the program and provide enough information to decide if the course should be continued the following year.

We then find the following type of chart describing course offerings:

Grade nine

Language Arts I
- Ia - College bound
- Ib - Vocational, technical, etc.
- Ic - Educational Mentally Handicapped
- Id and so forth based on petition

ALL STUDENTS WILL TAKE ONE OF THESE COURSES

Grade ten

Language Arts II	IIa - College bound
	IIb - Vocational, technical, etc.
	IIc - Educational Mentally Handicapped
	IId and so forth based on petition
	ALL STUDENTS WILL TAKE ONE OF THESE COURSES

Grade eleven

Language Arts III	IIIa -College bound
	IIIb - Vocational, technical, etc.
	IIIc - Educational Mentally Handicapped
	IIId and so forth based on petition
	ALL STUDENTS WILL TAKE ONE OF THESE COURSES

Grade twelve

Language Arts IV	IVa - College bound
	IVb, c, and so forth - - as per petition
	THIS AUTHOR WOULD REQUIRE ALL STUDENTS TO
	TAKE ONE OF THESE COURSES

POSITION #2-- The following courses will be approved at the high school level in addition to the Language Arts courses described above.

a. School publications

b. Journalism I, II

c. Fundamentals of speech (must be offered in all schools and should be required of all students in the author's opinion.)

d. Debate I, II

e. Radio and television

f. Dramatics

g. Appreciation of literature

h. Remedial English

i. Remedial reading

j. Communication skills

k. French I, II, III, IV

l. German I, II, III, IV

m. Spanish I, II, III, IV

n. Russian I, II, III, IV

o. Latin I, II, III, IV

p. Additional foreign language courses may be petitioned where materials and staff are available, i. e., English as a foreign language, Italian, Danish and so forth. Four year sequences are advisable on all foreign languages but it is recognized that there may be exceptions. Also, at least one four year sequence must be offered and preferably two. A district may be allowed to offer only one.

At least four of the courses listed above must be offered or a suitable substitute may be petitioned from the State Department of Public Instruction. In fact, it is quite appropriate to petition the right to offer courses not listed above and is to be encouraged under special circumstances: however, the burden of proof and justification for so doing lies with the local district.

POSITION #3--- Any school which cannot meet the preceding recommendations within a reasonable period of time (say five years) will be dropped from the approved list of "Comprehensive High Schools" and encouraged to become a part of a larger administrative unit. This should not necessarily imply the closing of any school and in fact may only mean transporting selected students for special course offerings on a tuition basis to meet requirements. The details of this procedure are not a subject for this section of this paper.

THE CHANGING SCALE OF COMMUNITIES AND THE NEED FOR CONTINUING SCHOOL READJUSTMENTS

by

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Our founding fathers provided in Section I, Article VI of the First Constitution of Missouri in 1820, that,

> "One school, or more, shall be established in each township, as soon as practicable and necessary, where the poor shall be taught gratis".

This reference to one or more schools per township reflects the speed of transportation in 1820 -- the steamboat was three years old on the Ohio and Mississippi River System, but the steam locomotive had not arrived and man was still dependent on his own "shanks ponies" or the horse or oxen for transportation.

The speed was three to four miles per hour. Thus, a township six miles by six with a central gathering point could be reached from any corner in one hour's walking time by man and horse. It was soon learned however that little children either couldn't or wouldn't walk this far or fast and the eventual establishment of common schools in 3 x 3, 2 x 3 or 2 x 2 square mile districts resulted across the country.

These districts were in Tune with the transportation of The time, but times change. I can forgive the founding fathers for not being able to see into the future with its good roads, gasoline

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engines, etc., but I cannot forgive the present generation clinging to their traditional patterns while their children's education suffers.

Within the very shadow of our State University, we have only this year finally annexed by request one of these pioneer common school districts.

We live in a big world -- the frontiers of space are without limit and we accept a trip to the moon as inevitable in the next few years -- but we resist joining with our neighbors in the next village to develop school facilities that will enable our children to develop their minds and bodies so that they, in the next half century, may make our accomplishments to date only stepping stones to the future they will build.

The very title of your organization denotes wide open spaces -- it also denotes declining populations in all except a few key cities It also reminds me of all the labels of a conservative - agricultural oriented mid-America with excessive resistance to change and still, I know you are all dedicated to the fundamental task of School District Reorganization. I appreciate the opportunity to expose you to a pattern of thinking that places the school as an institution within a community -- not separate from it.

I would hope that when I have finished today, you will have rediscovered the pattern of community behavior that has been evolving since our pioneer settlements became outmoded by the development of transportation and communication systems.

My purpose today will be to explain to you a technique that I have developed in working with communities. Known generally as the

Growth Center Concept, it is really nothing more than an exercise in geometry. Its fundamental principle is that a declining population exerts less demand for a given service and results in the discontinuance of every other service in the process of adjustment. This concept is being widely tested by many agencies ranging from private business to government and religious organizations. This is the first attempt to relate its technique to the problems of school reorganization. The experience I hope will be mutually satisfying.

I must first set the stage for this discussion by pointing out that prior to the settlement of the Great Plains region, the land surveyors at the request of the federal government, had already surveyed out the congressional townships and paved the way for future surveyors to establish section lines. When our first state schools were authorized, they were nearly always authorized on the basis of one per congressional township. As the population increased, the size of farm families and numbers of farm children increased. Later legislators authorized the division of congressional townships into four or more subdistricts. In Missouri, it was early recognized that a school should be established within every 3 x 3 square mile area and later with still further growth of population, the law was modified to permit the establishment of additional schools upon the petition of ten or more freeholders.

This was the pattern of school development throughout Missouri in the period up to about 1900. This was the period of maximum density of settlement in rural areas and the greatest number of school districts. (10,499 in 1900)

Then came a change in transportation, the beginning of mechanization in agriculture, the shift from the local post office to the RFD and further emphasis upon good road development with the coming of the automobile. It was at this time also that considerably more emphasis was being placed upon secondary education of a public nature and it was natural that these secondary schools would be concentrated in the township villages.

> "Our greatest need at present is a reorganization of our school unit for administrative and taxation purposes. We must find some means of concentrating the money raised for school purposes, and of arousing the interest of the people in their schools. Larger districts and fewer schools will greatly improve these conditions, just as the division of districts and the making of smaller schools have for a quarter of a century had most adverse effects. I would that we had in Missouri one thousand districts instead of ten thousand".* (The Superintendent would be glad to know that Missouri under the progressive leadership of Hubert Wheeler and Arthur Summers achieved this goal in 1966.)

The Superintendent in 1900 also recommended legislation for --

> "The consolidation of Small School Districts into Township School Districts -- to consolidate from six to a dozen districts into one organization under the control of one school board, paying a uniform rate of taxation into a common treasury from which all the teachers of the township are paid, would in some measure at least equalize

*From the 51st Report of the State Superintendent of Public Schools of Missouri, 1900, pp. 23-24

the burdens of taxation and the privileges of the children."*

With the further decline in both the size of farm families and the numbers of farm families in rural America, the need for reorganization or consolidation of school districts became quite apparent and a great movement began in the early 1900's and continuing until the great depression.

> "The problem of consolidation is one of interest in many parts of the State today. In some communities, especially the older and more thickly settled counties, the school attendance has been greatly reduced by the influx of the younger population to the villages and towns." - - -
> "There are, however, eighteen consolidated schools, but there is no legal authority for the transportation of pupils at public expense."**

During this period, thinking was largely one of consolidating nearby elementary districts into high school districts often maintaining the rural elementary school, but establishing a common base for a tuition free high school district. This continued until the 1940's when the further decline of rural population and the decreasing number of students in small consolidated high schools combined with the greatly diminishing number of elementary school pupils, precipitated school reorganization in Missouri on a major scale, Everyone in this room knows this pattern very well, so I will not dwell upon it except to say that, although there has been a rapid change in the number of school units, we are now approaching a period of reorganization of "reorganized" districts.

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*Page 38, 1910 Report

**Pages 39-40 -- Report of the State Superintendent of Public Schools - 1910

Some areas feel that they are already reorganized, but it is obvious that some of the reorganized districts will be re-reorganized simply because they are both running out of students and being forced to a realization that small schools cannot offer a wide enough variety of curriculum to meet the needs of a modern world.

Assuming, then, that further reorganization is in order and necessary, how can we professionally assist local school boards and citizens in taking a realistic look at their problem and, by using a standardized technique, project a pattern of school services that would meet the standards of both the parents and the school officials and still maintain schools with the minimal travel distances. As I project the material on these maps to you, I must assure you that, although I am dealing particularly with school factors today, schools are completely interdependent with all of the other elements of society. The highway networks, the retail trading patterns, the job-centered services, the hospital, religious and other social institutions which, like the schools, are being nudged into ever larger scales of district operation by declining population.

The principles that I now illustrate to you are based upon the fundamental fact that in the development of this country during the horse and buggy or walking transportation system, we were obviously establishing community service facilities, the general store, the post office and the elementary school at the two to four mile range and that as we improved our transportation system, both in vehicles and in road systems, we were able to go farther in the same time for a service. This increased mobility combined with declining numbers of people brought about the selection of every-other-one of

these two to four mile communities as the new point of service.

As we move through still longer periods of time and pass from the trotting horse and the county road systems to the primitive automobile and mud roads, we again find coinciding with the further decline in numbers of rural people a transference of patronage to the next nearest community of a larger size. Thus, we have continued to follow the progression from two to four and from four to eight and from eight to a sixteen mile radius of service.

For those areas with well-developed state and federal highways of an all weather nature, the pattern has doubled again so that principle service centers in mid-America from the western Missouri border eastward approximates 32 miles between principle towns and is approaching a 64-mile pattern in the dominately agricultural portions of the area. West of the Missouri border, the pattern of principle cities is on the larger scale of 64 plus miles spacing.

Treating only of the school situation, it appears in our Missouri studies that we have progressed thus far only through the two and four-mile service ranges and are currently in the eight-mile service radius stage. We are now facing a transition to the sixteen-mile radius of service. Two of the maps that I have here show the present distribution on essentially eight-mile maximum radius and a (See attached) projected distribution on a sixteen-mile radius around those schools which already have attained the size of 600 plus students in grades one to twelve. Obviously, these theoretical districts do not conform to the county lines and there is no reason that they should. One of the problems of school reorganization has been the channeling of school planning-thinking along county unit basis. The reason I

condemn this system is that when you try to service counties which are basically either squared[5] or rectangular areas, you find that someplace near the corner of one of the counties a significant town has developed and must be reckoned with in school reorganization. The pattern which I demonstrate on the second map shows how using this technique you avoid these elongated corners to a high degree.

The material that I am presenting here today has been rather quickly adapted for this presentation. I would hope that the opportunity would be presented in the future to devote considerable time to the application of this methodology to school problems. I firmly believe that schools as social institutions are subject to the same basic elements of all other social institutions -- the most important of which is population. The declining or expanding population is one of the most important elements to be considered in reorganization and the long run view is necessary for people to transport students and to join together in larger physical areas made possible by improved roads and speed of modern vehicles.

In this presentation, I have assumed that schools like all other social institutions are effected by five principle elements which I will quickly numerate:

1. The number of <u>people</u> to be served in,
2. The <u>spacial distance</u> that the service can satisfactorily cover at:
3. The <u>speed</u> of transportation of the period, within
4. The <u>time</u> allotted for movement of goods and services or the user of goods and services across this space, and
5. The <u>things</u> man creates to facilitate living.

In a forthcoming book entitled, PSSTT!, I have tried to call attention to the interrelationship of these five basic elements in man's community life.

1. First let us consider the number of people.

In a given spacial area, an increase in population to be served decreases the overhead cost per capita for the service. This holds true according to the law of diminishing returns until a point is reached which is beyond the span of one unit of administration at which time serious thought must be given to doubling the units of overhead or establishing an additional center of service and dividin the territory. On the other hand, when the population declines, eac loss of an individual in the service area increases the cost of over head shared by the remaining citizens. The time comes when the increased cost of the overhead function plus the necessity to curtail the variety of offering of services forces us to consolidate with others in similar position or to reorganize into much larger units to gain the advantage of economy of scale. This we have attempted in schools by moving from the common school districts to the consoli dated district and in some cases to the county unit but much more remains to be done.

2. Spacial area of service and population change

The physical area to be served by schools has not materially changed since 1900 except where large reservoirs have been built or national forests established. What has changed is the size of farms which have more than doubled with a corresponding reduction in numbe of farm families. This contributed directly to the decline of small

agricultural trading centers and the need for reorganization of schools.

A nine-county area included in the accompanying map has witnessed the decline in number of farms from 25,652 in 1900 to 11,037 in 1964. Currently, 1,215 farmers are handling one third of the land in the nine-county area. The remaining 10,000 farmers handle two thirds of the acreage. There is every indication the trend to large units will continue and conceivably in the years ahead, the number of farm units may decline below 5,000.

Unfortunately in the period 1900 to 1950, the residents of this area in general were so committed to the concept of the area as an agricultural region, they did not strive for industrial development as some less productive farming areas found desirable. Now, unfortunately, the labor force has shrunken to a point that has limited appeal to industry and especially when you consider the median age for the nine-county area is about 41 years.

The result of this inaction has been a wholesale out-migration of the younger people with a consequent decline of births and an increasing number of deaths until currently the area experiences more deaths than births. (994 more deaths than births in the last four years) The total population has declined from over 179,000 in 1900 to an estimated 83,000 in 1967.

The projected school enrollment for this nine-county area in the next decade is about 10% below the present level, barring a major reversal of governmental policies and deliberate dispersal of industrial expansion.

3. Speed of transportation

Farming today is a highly mechanized operation. The tractor and pick-up truck combined with electricity, radio and television, bring the farmer into a larger range of operation. The Saturday night trip to town has changed to a coffee break in all but the very busiest cropping season. Speed of movement has increased the scope of the farmers community -- he can trade in other towns and he does. The old agricultural villages have degenerated to a convenience center and a residence for retired farmers. The next village down the road now serves as his community center. Still local interests strive to hang on to the local school and bank. There were two consolidations in the area (17 of 37) last year, but there are still nearly one half of the high schools with less than 100 students in grades 9-12 and 29 of 37 schools have less than 200 students in grades 9-12.

4. Time

The spacing of schools is still fundementally on the eight-mile radius pattern. The same number of busses could transport the students to fewer schools without appreciably increasing the time on the bus by improved planning of routes.

Much time is spent in small areas doubling back and forth to pick up students -- a longer run with less doubling would be possible with the same busses in larger areas.

5. Things

Man has developed educational training devices and aids in great number, but the cost requires a distribution over a large

number of students. Further consolidation is a must if educational T.V. and electronic circuits are to be economically feasible. Specialized courses may be offered by two schools using the same instructor, commuting between schools a half day each.

From the consideration of these elements of an interrelated nature, we find that today with modern school buses, good roads, declining population, demand for still better schools and more variety of course offering, that in most of rural Missouri there is not enough population and resources to support school systems at the present pattern of eight-mile radius of service. It is anticipated that the 16-mile pattern will be an economic necessity in areas of declining population -- but this can only be achieved if the key towns of an area with the greatest population of students at the center, and with the best road network leading to that center are established as the central school of the district. I am not unmindful of the historical pattern in this state, that rural people resist joining up with the principle cities in their area. It is the same fundamental agricultural tradition which has stood in the way of bringing industrial jobs to these areas. But, as a professional person, I feel it my responsibility to caution against continued acceptance of emotionally inspired country located school facilities The very principle which some rural people continue to maintain of resisting the city is going to cost them a vast amount of money in the years ahead. Today, a modern school requires the financial support of not only rural farm land and residences but the retail, commercial and manufacturing base which is associated with the large cities. Further, if the training that the youngsters require is

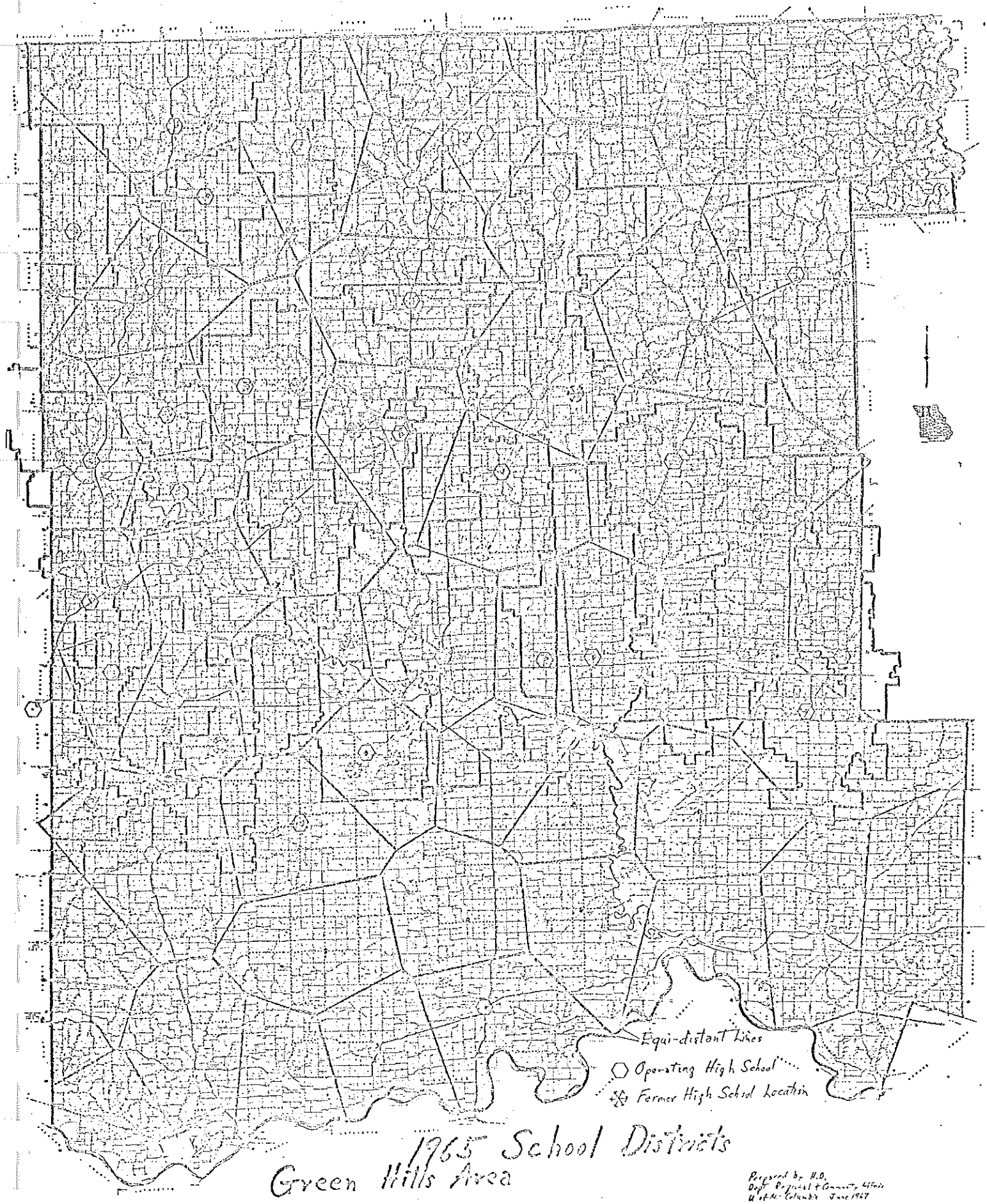
fundamentally a need for adapting to the needs of urban living -- not rural living. Training for industrial placement is very difficult to conduct in a rural setting. If we do not view with alarm the tendency to hold on to Charlie Brown's towel by rural people in every grudging adjustment to school problems, we will be guilty of helping them fall into a trap which has emotional satisfaction but is utterly unrealistic in the twentieth century. I say these things as a former farm boy who was steeped in this kind of thinking in my own youth, maturity. The people in the area covered by this map have a median age in access of 41 years. For the past four years, there have been more deaths than births and the only possible way of altering this situation is to strengthen some key central cities in the nine-county area so that there is enough scale to be operational on an efficient basis. If we cannot provide the kinds of services citizens want and develop some of the nonwork time activities that young America insists upon, they will continue to go to the city and rural areas will continue to lose population.

In view of these trends, the visualization of a pattern of schools large enough to provide the wide variety of subjects needed by modern, young Americans and still close enough not to be a burden on those who must be transported from the fringes of the district to the central city is needed.

Whatever scale professional school people establish for size of school or maximum distance for transportation can be utilized in developing this pattern. The technique is impartial -- it will not show preference between town A or B except as the inputs of students

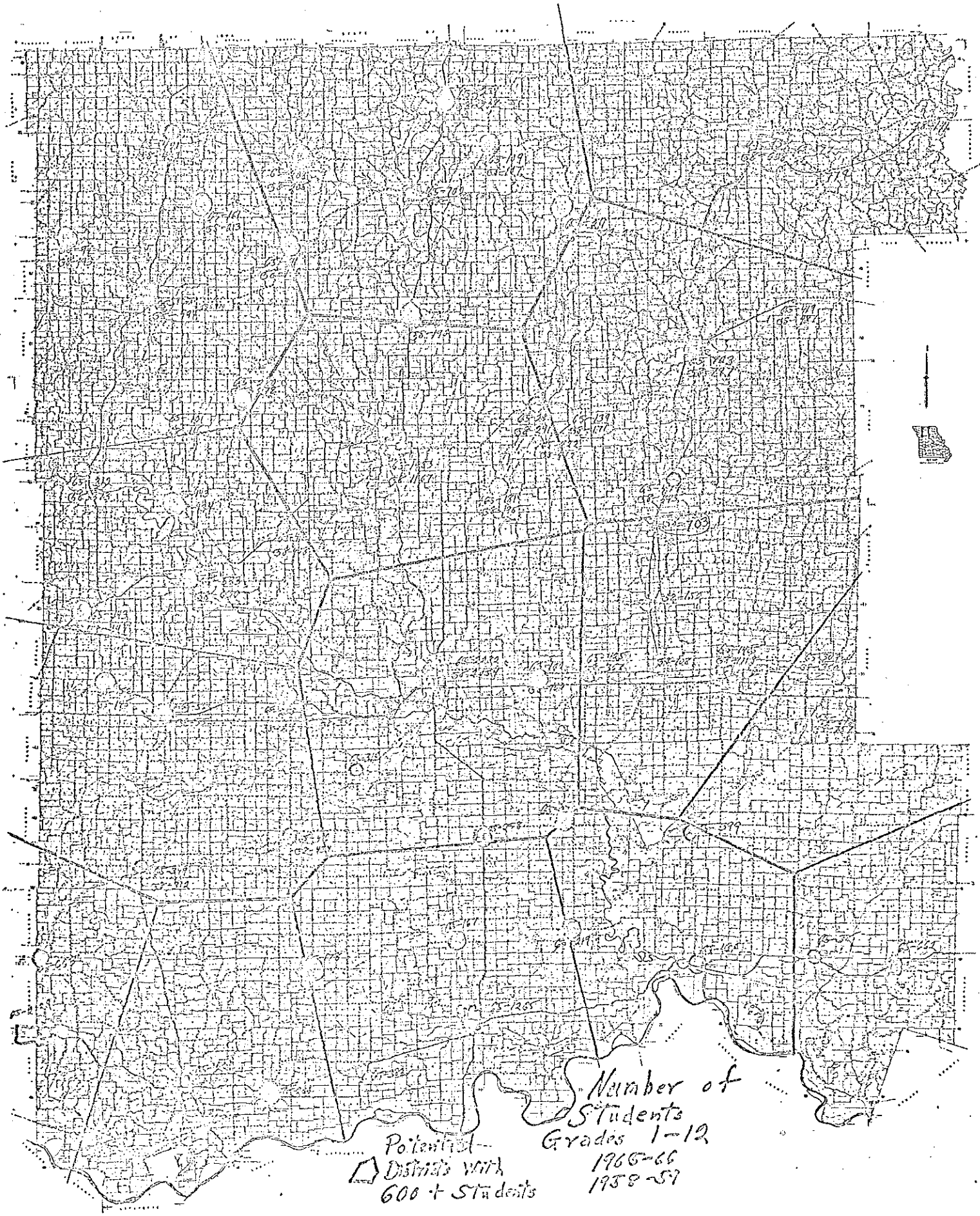
are loaded in favor of A over B. It requires presentation to the citizens with supporting background data such as I have used today so that citizens will understand the reason why further changes are necessary. As educators, we are expected to lead with ideas -- this is one way we can better serve communities in their adjustment to the late twentieth century.

HD:aw
6/26/67



1965 School Districts
Green Hills Area

Prepared by H.O.
Dept. Regional & Community Affairs
U. of M. - Columbia June 1967


Number of
Students
Grades 1–12
1966–66
1958–59
Potential—
Districts with
600 + Students

POSITION PAPER

THE EFFECT OF PUPIL TRANSPORTATION UPON SCHOOL DISTRICT REORGANIZATION

by

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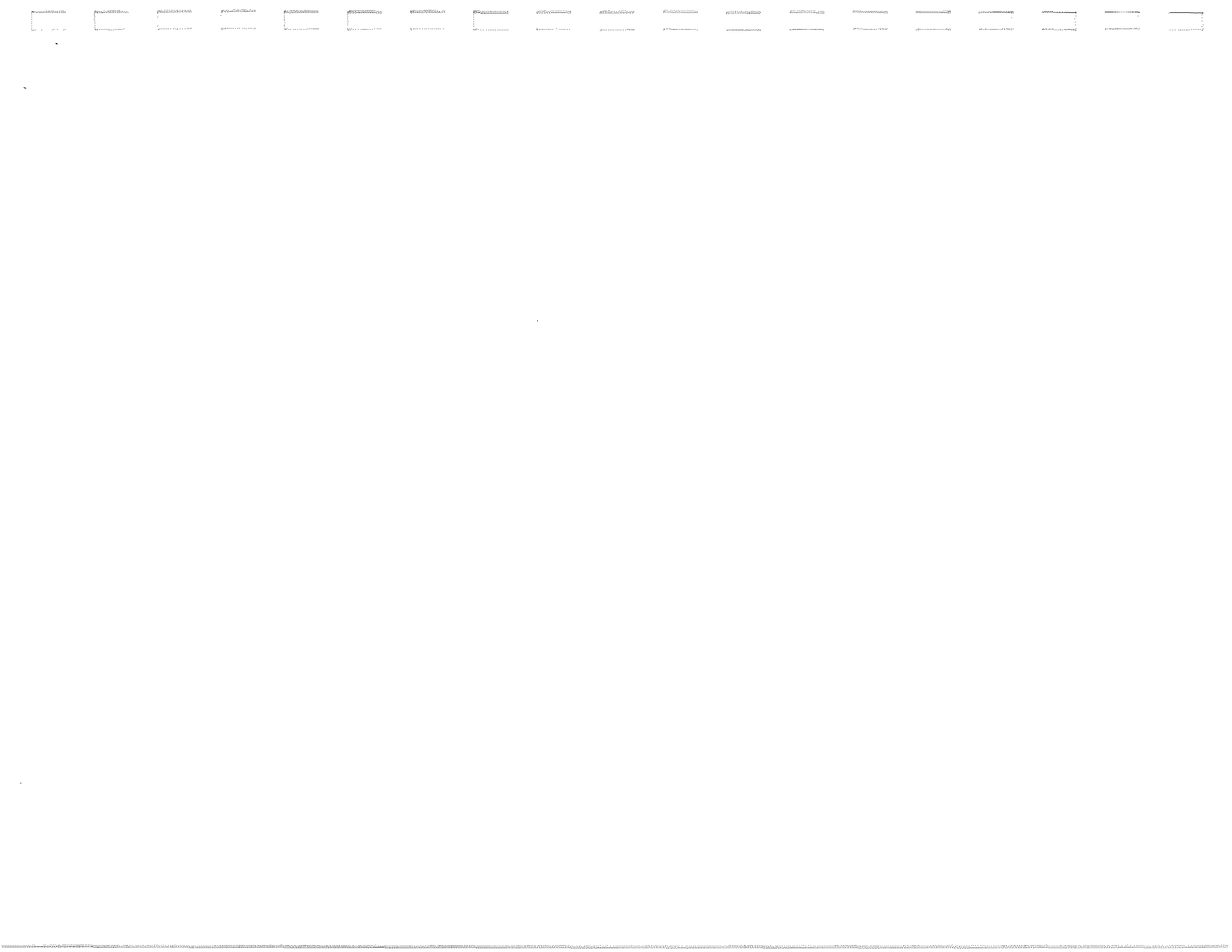

THE EFFECT OF PUPIL TRANSPORTATION UPON
SCHOOL DISTRICT REORGANIZATION

Feb. 20, 1968

The Beginning of Pupil Transportation

Schools in the United States had their origin as an agency of the church. A Massachusetts law in 1642 required towns to operate schools, however, the church remained dominant in the fuction of schools for many years. The early state constitutions, in some instances, did not even mention education. Most of those that did merely instructed the legislature to encourage education or provide for a system of free public schools.

The first method to provide education to the people was to try to place school buildings so that one would be near the people in every community. This was the reason for the creation of the very small elementary school districts of which some still exist in the State of Missouri. Still not every child was within walking distance of the school. Therefore, some type of school transportation has existed as long as there has been public schools. In the early days, however, transportation was considered to be the responsibility of the parent and the school had no official interest in the matter. Even school attendance in most states was a matter of decision for the parents.

Two important developments in the nineteenth century created the need for pupil transportation at public expense. The one basic development was that the states decided their own welfare demanded that all children receive some education. This idea eventually led to the compulsory attendance laws; therefore, the state must either locate a school close by or provide transportation to a school.

The second development was the consolidation of school attendance centers. Much of the rural population was never large enough to support a very big school. The school programs were changing in character and the smaller schools could not offer what many parents wanted for their children. The need for the consolidation of the attendance centers was used in many states to justify the laws for the

authorization of pupil transportation at public expense.

State Laws Affecting Pupil Transportation in Missouri

In 1900 there were approximately 10,000 school districts in Missouri. Many of the schools were too small to operate economically. Also, the increasing demand for high schools caused the people of Missouri to recognize the need for larger schools and the need for free pupil transportation. In 1911 a bill was passed that permitted school districts to provide free transportation at the expense of the district for pupils living more than one-half mile from school.

By 1922 some 30 school districts in Missouri were transporting pupils at the expense of the district, and by 1931 approximately 111 districts in 54 counties were transporting 8,209 pupils to school. In 1931 the Missouri General Assembly enacted legislation providing for a substantial amount of state aid for public schools. This legislation made available for the first time in history assistance to school districts in paying the cost of pupil transportation.

The 1931 school law which provided for state aid for the transportation of pupils required that the method of transporting the pupils be approved by the Department of Education. This law also led to the first minimum school bus standards developed in Missouri in 1932. By 1933 there were approximately 1,400 vehicles used in the transportation of public school pupils.

Another marked effect upon the growth of pupil transportation was the reorganization law enacted by the State Legislature in 1948. With the merging of many school districts over the state it was mandatory that adequate pupil transportation be provided. In 1949 the legislature strengthened the law regarding school bus standards and made the State Board of Education responsible for the adoption and enforcement of regulations not inconsistent with law to cover the design and operation of all school buses when owned and operated by the school districts

or privately owned and operated under contract with any school district. Under this law the regulations and standards for pupil transportation were adopted by the State Board of Education and published in 1951. Publication No. 73, Missouri Pupil Transportation Laws, Regulations and Standards was distributed state wide in 1951 and has been revised three times since that date.

The following table indicates the growth in public school transportation in Missouri from 1931 to 1967 inclusive.

Table I

Pupil Transportation Growth in Cost,

Number of Pupils and Vehicles

Year	Number of Pupils Transported	Total Enrollment	Amount of State Aid	Total Cost	Total Number of Vehicles
1931	8,209	660,306	-	-	-
1935	20,469	709,577	-	-	-
1940	87,810	700,640	1,424,214	-	-
1945	103,939	620,844	1,905,256	-	2,200
1950	146,421	644,457	2,441,519	-	2,556
1955	224,861	724,739	3,094,959	9,629,462	4,361
1960	330,266	820,724	7,610,343	14,107,815	5,119
1965	423,581	943,369	11,566,200	18,537,006	5,858
1967	476,975	1,002,539	15,563,106	21,929,159	6,418

The Importance of Pupil Transportation in Missouri Increases

As can be seen in the above table transportation has grown greatly within the past 35 years. The cost of transportation is an important factor in almost all of the school districts in Missouri. The need, importance and objectives

of transportation service are herein reviewed.

Transportation, as we have pointed out, has played a very important role in the development of universal education in America. The laws of Missouri provide a legal basis for transporting pupils to and from school. Under the law the school board has the authority and the responsibility to make all needful rules and regulations for the transportation of the school district pupils.

The primary purposes of transporting pupils to school attendance centers include the following:

1. Provide a means by which pupils can reach school under safe and healthful conditions.
2. Increase the opportunities to expand and enrich the educational programs and services.
3. Make possible the extension of equal educational opportunities to more pupils.
4. Contribute to the perfecting of more adequate school districts.
5. Increase the efficiency and economy in the development and operation of an improved school program.

Table number II shows a comparison between the schools of McDonald County before the County was reorganized into one school district and after the reorganization. The Goodman R-II School District in McDonald County is not included in either table bacause it became a part of the Neosho R-V School District in Newton County and is not now a part of the McDonald County R-I School District.

Table II

Related Pupil Transportation Cost

McDonald County

1962 - 1963

School	Total Current Expenditures	Total Transportation Cost	Percent of Current Expenditures	Cost Per ADT	No. Buses	Cost Per Bus	Total Miles	Cost Per Mile
R-I Anderson	197,270	20,541	10.4	48.66	8	2567.62	68,730	.299
R-III Southwest City	87,957	7,813	8.9	46.16	4	1953.25	31,320	.249
R-IV Noel	135,056	10,500	7.8	44.34	4	2625.00	37,800	.278
R-VI Rocky Comfort	109,846	30,970	28.2	102.79	7	4424.28	86,304	.359
R-VII Pineville	127,273	16,959	13.3	62.48	6	2826.50	74,124	.229
Totals	657,402	86,783	13.2	60.87	29	2992.52	298,278	.291

1966 - 1967

R-I McDonald County	917,857	94,908	10.3	63.22	31	3061.55	328,866	.289

As noted in table number II there were 100 more ADT in the single reorganized district than in all the districts before reorganization. The cost per pupil was $2.33 more in the single district than in the combined districts before reorganization. This can be attributed in a large part to increased costs.

The total cost of transportation for the single unit district was $94,908 for the 1966-67 school year. The total cost of transportation for all the individual districts in 1962-63 was $86,783 or $8,125 less than the combined districts in 1966-67. Again, part of the increase in cost can be attributed to an overall increase in the cost of living, however, the ADT was also 100 greater for the single district than for the individual districts before reorganization. The amount expended by the individual districts in 1962-63 was $38,038. The amount expended by the single reorganized district in 1966-67 was $15,169 or $22,869 less than was expended by all the districts in 1962-63. The amount of state aid received by the individual districts in 1962-63 was $48,745 compared to $79,738 received by the single district in 1966-67. The single district received $30,993 more state aid in 1966-67 than all of the combined individual districts in 1962-63. This increase was due primarily to an increase of about one third in the amount of state transportation aid which the districts received.

The average bus route in the single district in 1967-68 is 28 miles in length. The longest route is 48 miles long. The average length of time students are required to ride the bus is 30 minutes with the longest time being 90 minutes. In four of the elementary schools students arrive at school 30 minutes before time for school to begin, while at two of the elementary schools they arrive ten minutes before school begins. The students wait at school the same length of time in the afternoon for the school bus to take

them home. It was estimated that 90 per cent of the students are away from home no longer than eight to eight and one-half hours each day.

It is felt that generally the parents are well pleased with the transportation program. School officials pointed out that transportation certainly has not been as big a problem as many people thought it would be when the district was reorganized. The one problem that has given some difficulty has been the activity trips, but the officials of the district feel that this can be alleviated somewhat in the future.

Roads, a Factor in School District Reorganization

One of the objections to school district reorganization in the past has been the problem of transporting students from an expanded district to a central location. This has been solved to some degree with the use of mutiple attendance centers. Another thing that has been of great importance, in the reorganization of school districts, is the improvement of our roads.

From the earliest beginnings of school transportation roads have been a major factor. Roads, however, have been improved and changed as rapidly as our changing society. At the present time 95 per cent of all rural units (homes, schools, churches, etc.) are within two miles of a state maintained road.

Table number III shows the number of road miles in Missouri, by type, for the years 1950, 1960 and 1966. The "Hard Surfaced" roads in this table include all types of hard surfacing used on the roads including concrete, bituminous asphalt, and others. "Granular Surfaced" roads include all gravelled roads that are county or state maintained. "Dirt Surfaced" roads include all graded and drained and unimproved roads over the state.

Table III

ROADS IN MISSOURI

1950, 1960 and 1966

COUNTY	HARD SURFACED			GRANULAR SURFACED			DIRT SURFACED			TOTALS		
	1950	1960	1966	1950	1960	1966	1950	1960	1966	1950	1960	1966
Adair	103.3	192.8	243.2	396.6	533.7	517.5	505.1	246.5	181.7	1005.0	973.0	942.4
Andrew	213.7	180.4	233.2	194.5	395.1	357.9	425.2	211.6	198.3	833.4	787.1	789.4
Atchison	165.1	283.1	298.5	97.8	228.5	255.1	639.6	380.3	329.2	902.5	891.9	882.8
Audrain	99.5	229.7	297.4	785.2	827.8	794.7	328.2	110.5	85.3	1212.9	1168.0	1177.4
Barry	132.2	373.2	475.1	603.0	824.7	809.7	607.0	67.9	13.6	1342.2	1265.8	1298.4
Barton	93.2	147.8	193.0	588.4	705.7	661.1	402.7	126.8	115.3	1084.3	980.3	969.4
Bates	100.7	208.6	340.9	891.0	964.1	965.8	527.9	130.7	72.7	1519.6	1303.4	1379.4
Benton	57.4	147.3	223.3	863.9	795.9	718.2	52.8	21.6	18.6	974.1	964.8	960.1
Bollinger	107.9	157.5	227.6	524.5	573.2	511.8	150.1	35.2	33.0	782.5	765.9	772.4
Boone	105.3	243.6	329.0	594.1	761.7	680.2	577.6	149.7	109.6	1277.0	1155.0	1118.8
Buchanan	140.0	295.3	319.7	482.2	388.3	381.0	168.9	47.0	47.0	791.1	730.6	747.7
Butler	123.1	258.7	294.5	475.2	528.6	649.6	335.5	153.3	56.7	933.8	940.6	1000.8
Caldwell	65.9	122.7	188.5	372.7	514.8	498.3	415.0	149.2	128.6	853.6	786.7	815.4
Callaway	112.5	244.0	326.6	854.0	822.8	735.3	223.9	102.4	75.4	1190.4	1169.2	1137.3
Camden	71.0	176.1	233.1	574.1	468.1	485.8	25.3	13.5	5.5	670.4	657.7	724.4
Cape Girardeau	128.6	264.6	327.3	624.6	524.0	494.8	27.7	4.3	1.1	780.9	792.9	823.2
Carroll	98.0	193.3	268.7	675.5	760.9	768.6	397.9	193.9	168.0	1171.4	1148.1	1205.3
Carter	52.2	92.9	115.5	286.8	273.1	281.6	85.2	62.0	45.3	424.2	428.0	442.4
Cass	130.3	246.3	332.3	737.5	771.1	807.4	379.9	209.9	115.6	1247.7	1227.3	1255.3
Cedar	62.4	133.2	195.6	362.7	555.1	490.1	62.8	139.4	118.9	487.9	827.7	804.6

COUNTY	HARD SURFACED			GRANULAR SURFACED			DIRT SURFACED			TOTALS		
	1950	1960	1966	1950	1960	1966	1950	1960	1966	1950	1960	1966
Chariton	117.3	242.9	270.3	683.8	656.8	759.5	413.9	183.2	144.1	1215.0	1082.9	1173.9
Christian	97.2	208.9	300.0	277.0	609.7	560.0	447.8	12.7	33.5	822.0	831.3	893.5
Clark	75.6	155.4	208.4	356.6	460.5	423.9	363.0	151.2	133.9	795.2	767.1	766.2
Clay	264.9	234.5	256.8	440.8	407.5	391.6	130.2	37.3	37.3	835.9	679.3	685.7
Clinton	80.6	160.3	210.0	362.4	446.7	449.2	269.5	92.2	73.4	712.5	699.2	732.6
Cole	155.5	199.7	237.7	428.1	384.6	366.6	1.0	.6	-	584.6	584.9	604.3
Cooper	93.6	208.2	256.2	493.1	604.7	548.0	336.7	36.6	35.4	923.4	849.5	839.6
Crawford	92.1	175.2	264.0	614.3	629.2	552.4	23.2	4.1	2.3	729.6	808.5	818.7
Dade	61.2	128.6	199.2	273.5	707.1	596.0	656.2	34.4	47.0	990.9	870.1	842.2
Dallas	91.7	174.3	210.4	376.0	587.3	552.3	362.9	4.5	3.1	830.6	766.1	765.8
Daviess	84.0	192.3	269.5	311.5	494.3	499.3	809.7	344.1	275.0	1205.2	1030.7	1043.8
Dekalb	78.9	149.6	187.7	252.7	442.2	444.6	579.2	252.0	218.9	910.8	843.8	851.2
Dent	97.5	187.2	225.8	560.3	588.7	582.2	125.0	32.1	10.0	782.8	808.0	818.0
Douglas	72.0	165.7	280.1	271.2	821.2	692.6	929.6	49.7	52.3	1272.8	1036.6	1025.0
Dunklin	159.3	251.6	502.5	294.6	373.6	394.1	642.4	390.4	130.6	1096.3	1015.6	1027.2
Franklin	177.0	352.9	455.7	1021.1	857.3	786.5	18.5	3.8	.2	1216.6	1214.0	1242.4
Gasconade	88.8	146.2	199.6	591.8	541.5	492.9	82.5	5.9	1.8	763.1	693.6	694.3
Gentry	57.6	155.1	210.7	266.2	407.5	360.5	628.7	269.0	251.9	952.5	831.6	823.1
Greene	286.6	665.9	751.5	1205.8	781.0	679.4	16.2	1.4	1.3	1508.6	1448.3	1432.2
Grundy	70.6	155.1	190.0	384.0	423.7	440.3	272.3	108.2	81.6	726.9	687.0	711.9
Harrison	92.4	222.5	317.6	351.7	640.3	559.0	839.0	388.2	314.4	1283.1	1251.0	1231.0
Henry	119.1	234.0	328.8	657.1	680.4	638.5	361.7	195.0	161.7	1137.9	1109.4	1129.0
Hickory	46.6	107.9	152.3	387.3	381.4	343.7	63.3	8.9	10.3	497.2	498.2	506.3
Holt	97.9	149.1	179.8	175.9	377.7	364.0	433.7	185.4	175.1	707.5	712.2	718.9

COUNTY	HARD SURFACED			GRANULAR SURFACED			DIRT SURFACED			TOTALS		
	1950	1960	1966	1950	1960	1966	1950	1960	1966	1950	1960	1966
Howard	71.7	158.4	209.4	353.6	409.9	362.2	229.8	64.8	45.0	655.1	633.1	616.6
Howell	126.5	254.5	372.4	847.5	1104.5	1023.9	395.6	38.2	7.7	1369.6	1397.2	1404.0
Iron	66.0	131.5	182.7	302.0	278.8	269.6	47.6	1.3	3.6	415.6	411.6	455.9
Jackson	1244.8	1131.7	752.3	43.3	25.8	1.0	18.8	4.0	.7	1306.9	1161.5	754.0
Jasper	269.7	453.6	485.4	925.0	729.7	695.1	49.3	3.4	1.2	1244.0	1186.7	1181.7
Jefferson	212.4	416.7	477.6	753.5	543.7	488.6	21.4	1.9	.8	987.3	962.3	967.0
Johnson	114.9	238.5	363.5	952.5	983.2	921.3	314.5	128.5	83.7	1381.9	1350.2	1368.5
Knox	57.5	131.1	180.7	336.9	480.6	445.0	445.3	182.4	140.5	839.7	794.1	766.2
Laclede	119.2	228.9	339.2	296.2	731.7	643.5	489.5	7.3	1.2	904.9	967.9	983.9
Lafayette	167.6	269.7	326.1	719.1	734.6	718.6	142.9	43.9	32.2	1029.6	1048.2	1076.9
Lawrence	181.4	387.4	524.3	716.8	793.6	667.9	321.2	10.3	8.4	1219.4	1191.3	1200.6
Lewis	455.2	149.1	211.6	65.5	583.1	456.8	241.0	113.5	54.6	761.7	845.7	723.0
Lincoln	91.6	179.2	240.0	769.1	653.9	617.5	32.9	34.9	25.7	893.6	868.0	883.2
Linn	118.5	215.7	263.2	502.0	638.5	592.7	480.6	212.4	181.5	1101.1	1066.6	1037.4
Livingston	71.6	155.1	206.6	395.8	476.1	466.1	384.0	205.2	179.8	851.4	836.4	852.5
McDonald	95.3	170.0	259.8	177.9	622.4	535.2	539.0	16.2	3.8	812.2	808.6	798.8
Macon	96.2	224.2	311.1	476.0	699.1	638.3	864.9	439.6	384.0	1437.1	1362.9	1333.4
Madison	62.7	123.1	166.8	291.2	252.1	243.1	38.4	25.6	30.9	392.3	400.8	440.8
Maries	64.4	117.2	192.2	496.6	464.7	406.7	34.4	9.6	5.5	595.4	591.5	604.4
Marion	103.7	198.1	221.4	529.6	460.2	435.1	37.3	16.9	13.4	670.6	675.2	669.9
Mercer	50.3	138.4	194.0	293.4	372.2	331.1	426.0	188.7	147.8	769.7	699.3	672.9
Miller	103.6	178.3	221.3	717.8	687.8	642.6	31.1	2.5	.5	852.5	868.6	864.4
Mississippi	108.0	228.6	360.3	224.8	279.2	178.1	206.7	44.7	34.6	539.5	552.5	573.0
Moniteau	63.7	113.6	164.3	435.9	562.9	528.2	308.8	11.9	3.8	808.4	688.4	696.3
Monroe	83.4	180.4	244.8	582.2	751.6	689.6	513.8	112.7	88.3	1179.4	1044.7	1022.7

COUNTY	HARD SURFACED			GRANULAR SURFACED			DIRT SURFACED			TOTALS		
	1950	1960	1966	1950	1960	1966	1950	1960	1966	1950	1960	1966
Montgomery	84.0	156.2	213.3	570.2	563.5	533.1	119.8	40.9	20.2	774.0	760.6	766.6
Morgan	61.8	167.8	224.8	727.2	687.8	633.4	54.0	11.7	3.5	843.0	867.3	861.7
New Madrid	123.6	263.5	330.7	452.2	519.4	520.1	216.0	62.8	100.6	791.8	845.7	951.4
Newton	190.6	360.1	436.5	820.6	835.1	750.4	184.6	11.2	3.9	1195.8	1206.4	1190.8
Nodaway	168.3	259.4	363.2	309.0	843.6	771.6	1113.7	469.3	440.5	1591.0	1572.3	1575.3
Oregon	50.9	173.6	221.2	590.8	518.2	527.2	112.2	80.4	71.3	753.9	772.2	819.7
Osage	83.0	158.0	241.8	588.9	524.9	443.6	25.0	10.3	7.8	696.9	693.2	693.2
Ozark	82.7	171.4	230.2	191.6	623.9	693.8	913.9	31.3	7.5	1188.2	826.6	931.5
Pemiscot	147.6	232.9	250.7	468.0	540.4	526.7	209.3	28.9	21.4	824.9	802.2	798.8
Perry	74.1	151.6	215.0	497.9	477.2	432.8	76.0	17.7	18.5	648.0	646.5	666.3
Pettis	130.9	304.4	399.6	904.4	786.3	677.8	57.8	18.4	19.9	1093.1	1109.1	1097.3
Phelps	97.5	203.1	270.9	631.9	588.3	542.4	25.1	4.5	.2	754.5	795.9	813.5
Pike	125.1	194.1	295.0	540.4	623.1	578.1	231.7	68.7	43.5	897.2	885.9	880.6
Platte	107.1	236.7	262.1	414.5	405.3	313.6	154.3	39.8	23.9	675.9	681.8	599.6
Polk	97.5	217.4	291.1	762.2	848.1	788.7	312.7	15.6	11.0	1172.4	1081.1	1090.8
Pulaski	94.4	174.3	206.3	429.1	390.2	363.3	49.0	5.9	5.3	572.5	570.4	574.9
Putnam	75.9	180.9	207.7	158.9	351.1	324.6	671.1	340.3	298.6	905.9	872.3	830.9
Ralls	51.9	158.1	207.9	541.8	508.1	461.3	95.8	39.2	28.4	689.5	705.4	697.6
Randolph	90.1	183.9	231.7	521.3	514.8	449.2	216.2	107.8	101.9	827.6	806.5	782.8
Ray	82.3	154.1	243.7	576.2	708.8	634.0	304.1	44.8	68.1	962.6	907.7	945.8
Reynolds	90.4	119.7	221.6	393.3	511.7	536.0	134.9	23.4	35.9	618.6	654.8	793.5
Ripley	52.1	130.4	178.9	352.9	385.1	403.0	166.6	88.5	60.0	571.6	604.0	641.9
St. Charles	167.6	287.9	418.6	545.1	436.9	367.1	36.6	15.0	16.1	749.3	739.8	801.8
St. Clair	89.9	154.8	246.5	519.5	695.7	577.7	302.9	105.4	106.2	912.3	955.9	930.4

COUNTY	HARD SURFACED			GRANULAR SURFACED			DIRT SURFACED			TOTALS		
	1950	1960	1966	1950	1960	1966	1950	1960	1966	1950	1960	1966
St. Francois	164.6	324.5	395.1	343.2	200.0	167.6	4.7	2.9	4.1	512.5	527.4	566.8
Ste Genevieve	62.0	125.2	162.5	338.9	307.8	288.5	45.8	15.4	11.4	446.7	448.4	462.4
St. Louis	1024.6	1066.8	1218.5	30.6	-	-	2.8	-	-	1058.0	1066.8	1218.5
Saline	127.3	256.9	351.5	878.5	752.4	736.6	263.0	109.4	95.9	1268.8	1118.7	1184.0
Schuyler	67.4	122.8	174.6	98.3	202.7	179.8	419.8	236.5	192.2	585.5	562.0	546.6
Scotland	54.4	108.1	160.9	180.9	393.7	376.3	514.7	222.3	179.4	750.0	724.1	716.6
Scott	88.9	313.3	311.6	321.6	263.5	287.7	204.8	28.2	10.4	615.3	605.0	309.7
Shannon	69.7	146.8	202.9	517.4	605.6	597.2	262.4	52.8	34.8	849.5	805.2	834.9
Shelby	75.2	146.3	195.1	394.6	493.8	486.6	378.3	194.7	146.1	848.1	834.8	827.8
Stoddard	120.1	299.6	406.6	833.5	912.6	850.0	350.9	53.3	25.1	1304.5	1265.5	1281.7
Stone	93.9	185.6	246.5	103.7	487.0	426.2	435.9	.6	2.7	633.5	673.2	675.4
Sullivan	100.7	172.3	259.6	265.3	475.5	459.1	754.6	383.3	251.4	1120.6	1031.1	970.1
Taney	81.3	192.0	260.2	327.6	407.8	356.9	177.1	1.3	.5	586.0	601.1	617.6
Texas	141.5	330.6	402.3	925.3	1079.6	980.1	344.2	28.2	19.8	1411.0	1438.4	1402.2
Vernon	84.6	201.9	292.3	552.0	774.8	755.9	724.0	345.9	297.6	1360.6	1322.6	1345.8
Warren	49.9	115.3	171.7	381.4	340.4	294.0	37.9	10.9	12.4	469.2	466.6	478.1
Washington	91.6	208.0	311.8	387.9	380.2	317.2	53.9	6.3	.4	533.4	594.5	629.4
Wayne	93.6	201.7	273.8	401.0	401.1	440.6	203.5	35.2	7.9	698.1	638.0	722.3
Webster	88.7	210.5	285.2	344.8	738.3	662.1	538.9	12.2	2.0	972.4	961.0	949.3
Worth	39.9	86.6	113.2	121.9	234.0	230.9	316.6	105.2	85.8	478.4	425.8	429.9
Wright	78.6	192.4	263.2	212.3	762.2	662.9	836.9	7.1	4.5	1127.8	961.7	930.6
State		25,188.7			63,942.5			10,800.5			99,931.7	
Totals	14,238.0		32,430.7	54,693.9		59,785.1	34,413.3		8,492.3	103,345.2		100,708.1

Note: Graded and drained, and unimproved roads are included in dirt surfaced roads.

As noted in the totals at the end of the table the number of miles of hard surfaced roads increased between 1950 and 1966 from 14,238 to 32,431 or 228 per cent. The number of granular surfaced roads increased from 54,694 to 59,785 an increase of about ten per cent. The dirt surfaced roads have decreased from 34,413 to 8,492 a decrease of about 75 per cent.

As can be attested by the above information roads are no longer a deterring factor in the reorganization of school districts.

What Reorganization and Transportation has Meant to McDonald County

One of the advantages that a large school district has over a small district is the opportunity to offer a larger and more comprehensive curricular program. Another important factor, of course, is the available financial resources.

In McDonald County in the 1962-1963 school year the high school population of six high school districts ranged from a high of 228 pupils in the Anderson R-I District to a low of 105 pupils in the Rocky Comfort R-VI District. The highest assessed valuation of any district in the county was $1,966,433 in the Anderson R-I District and the lowest was $891,000 in the Goodman R-II District. The total number of units of approved credit in the six districts ranged from a high of 42½ units to a low of 30 units.

The complete reorganization of McDonald County was consummated on September 30, 1966. The McDonald County R-I School District is now made up of all the component high school districts with the exception of the Goodman R-II District which became a part of the Newton County Neosho R-V District.

In the 1967-68 school year the McDonald County R-I has a total of 1,939 pupils of which 520 are in high school. It has an assessed valuation of $8,903,367 on a 2.85 tax levy. The total assessed valuation before reorganization of all the county districts, except the Goodman R-II District, was $7,418,963 or $1,483,404

less than the present valuation. The total number of approved units of credit now number 69 units, or 26½ units more than the district that offered the greatest number of units, and 39 more than the district that offered the least number of units before reorganization. The high school pupils of McDonald County are now participating in an educational program that could never have been possible without reorganization and the pooling of resources. The Senior high school building is a beautiful new building with well equipped departments and a new well equipped library. The new building is located at the intersection of highways U.S. 71 and Missouri 76 on a site of 40 acres of land.

The adult population as well as the student population of McDonald County take great pride in their school and the type of education that is now available to the students of the county.

Knox County R-I Transportation

The reorganization of Knox County into one unified school district in 1961 was a big step forward educationally for the pupils of Knox County according to school officials of that District. Before 1961 there were five high school districts and 36 elementary school districts in the County.

The Knox County R-I School District now has a total of 1,180 pupils enrolled in school and 885 are being transported. The longest route that is run by any school bus of the District is 31 miles. The average length of all routes is 25 miles. The longest time any child is required to ride the bus is 90 minutes. The average length of time, however, that students must ride the bus is about 25 minutes. This includes the students in Edina, who ride the bus only about five minutes out to the high school. The per cent of students delivered to the school in different periods of time are as follows: Fifty per cent of the students are delivered within 30 minutes; seventy-five per cent are delivered within 45 minutes; ninety-seven per cent are delivered within 60 minutes, and three per cent are required to ride the bus between sixty and ninety minutes before reaching school.

The longest period of time that any elementary students is required to wait at school, after delivery by the school bus, is 15 minutes. There is no waiting time to catch the bus home at the end of the school day because the buses are waiting when school is dismissed.

Most of the school bus transportation in Knox County is almost door to door service. Only one child is required to walk as much as three-fourths of a mile to meet the bus. This is due to the child's home being situated in a location that is impossible to serve with the school bus.

Bus drivers in Knox County that have driven a bus for a number of years say that roads have improved very much over the years. However, the greatest

dissatisfaction among the drivers seemed to be road conditions. More hard surfaced roads are desired and the present roads, they feel, need more attention than they are receiving, such as more grading, gravel, better bridge repairs and the cutting of brush along the right-of-way. All drivers, parents and school officials interviewed did not feel that extra-school activities were a problem.

Academic Improvement

The curriculum improvements since reorganization have been very noticeable. The average number of current course units offered in the five high school districts before reorganization was 22¼ units. There is now a total of 55 current course units being offered. Four areas are listed in which courses were offered in the high schools before reorganization. The average number of each area course units is listed for the combined high schools before reorganization. They are as follows:

1. Communicative Skills 3.8 units
2. Social Science 4.1 units
3. Mathematics 2.2 units
4. Science 1.8 units

The alternate course units offered on the average for the five schools were 10.0 units.

In the 1966-67 school year 55 current course units were offered with four alternate course units. In the areas listed above the R-I School District offered the following unit courses:

1. Communicative Skills 9.0 units
2. Social Science 6.5 units
3. Mathematics 5.5 units
4. Science 6.0 units

In the five high school districts before reorganization; one school employed a half-time guidance counselor, and one school had a guidance counselor one period per day. One school offered one course in a foreign language.

During the 1966-67 school year the following special services were offered in the R-I School District.

1. One full-time high school guidance counselor
2. One full-time elementary guidance counselor
3. Three different foreign languages.
4. One basic reading course.
5. Two teachers teaching elementary physical education.
6. One full-time elementary special education teacher.
7. One full-time secondary special education teacher.

Other advantages that were mentioned since the schools have reorganized are:

1. Schools are not now competing for high school students.
2. The tax levy is the same all over the county.
3. Each student has an equal assessed valuation back of his education.
4. Teachers' salaries in the county are uniform.
5. The pupil-teacher load is now more evenly distributed.
6. The larger enrollment increases the opportunities for an expanded and varied curriculum including art, music, vocational courses and others.

Most of the people interviewed felt that the most important ingredient in forming an enlarged school district such as the one in Knox County is the spirit of cooperation of the people of the county and good leadership. They feel that they have had both.

Knox County Schools Before Reorganization

1959-60

School	Assessed Valuation	Levy	Classification	Elem.	H.S.	Communicative Skills	Social Science	Mathematics	Science	Alternate Units Offered	Current Units Offered	Total Units Offere
Novelty R-III	1,889,130	2.30	A	144	54	4	4	2	1	13 1/2	25	38 1/
Hurdland R-IV	1,278,765	2.10	APP	118	45	4	5	2	1	2 1/2	20 1/2	23
Knox City R-V	1,118,390	2.10	A	94	60	4	3	1	2	14 5/8	19 3/8	34
Baring No. 12	635,480	1.75	A	105	63	3	3	2	1	12 1/4	17 1/2	29 3/
Edina No. 34	965,105	2.00	A	182	148	4	5 1/2	4	4	7 1/8	30 3/8	37 1/
Total	5,886,870	11.25		643	370	19	20 1/2	11	9	50	~~112 3/4~~	~~162 1/~~
Average.....	1,177,374	2.25				3 4/5	4 1/10	2 1/5	1 4/5	10	22 11/20	32 11

The total Knox County school district assessed valuation for all districts in 1960-61 school year was $11,578,925.

Special Services

One school had a half-time counselor.

One school had a counselor for one period per day.

One school had one course in a foreign language (17 pupils)

1966-67

Knox Co. R-I	12,469,900	2.70	A	755	427	9	6 1/2	5 1/2	6	4 1/2	54 1/2	58 1/

Special Services

Offers three foreign language courses in three different languages.

One full-time guidance counselor for high school.

One full-time guidance counselor for elementary.

One basic reading course being offered.

Two teachers are now teaching elementary P.E.

One full-time elementary special education teacher.

One full-time high school special education teacher.

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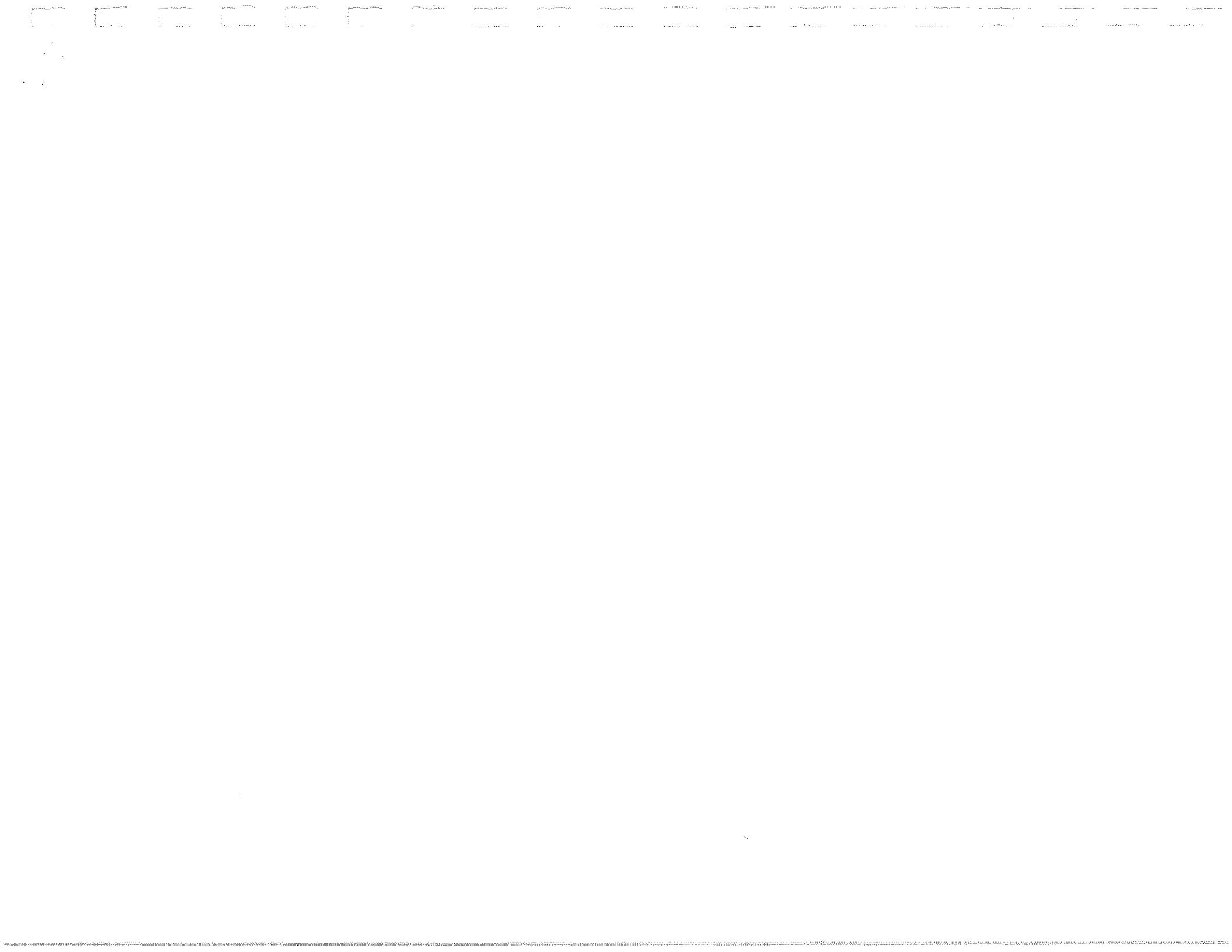

STATE FINANCIAL SUPPORT AND SCHOOL DISTRICT ORGANIZATION IN MISSOURI

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STATE FINANCIAL SUPPORT AND SCHOOL DISTRICT ORGANIZATION IN MISSOURI

PURPOSE

The purpose of this paper was to examine the state support of and distribution to the public schools in Missouri. Particular attention was given to the operation of the Foundation Program and how changes in it might encourage continued reorganization of the school districts in the state.

DEVELOPMENT OF STATE SUPPORT

State financial support of public education has developed in Missouri since early statehood through a great number of legislative acts providing financial assistance to the local school units. This development has been a gradual process with various groups influencing the enactments of the many different laws which have affected the present method of school support used in Missouri. With the possible exception of the 1931 school law and the Foundation Program of 1955, legislation for state support can be characterized as provisions designed for the purpose of aiding various phases of education having unrelated aspects, and have not contributed to the development of a carefully planned and designed

program which would guarantee to each student in the state a satisfactory minimum of education regardless of the ability of the local district to finance such an educational program.

In the early days of Missouri Statehood public education received little direct support from the General Assembly. The existing schools were dependent largely on the parents and the local districts for support and operation. Prior to 1837 the General Assembly was concerned mainly with the direction of the public schools. At this time the common school fund was created. This act directed the governor to invest the fund in stock of any bank which the state might incorporate. The original source of the common school fund of 1837 was a group of 12 salt springs with 6 sections of land adjoining each. The General Assembly in 1839 created a fund to replace the common school fund naming it the State School Fund. It provided that the income from the fund should be distributed on the basis of 60¢ per child enumerated. The 1839 act also made it possible for local school districts to levy taxes for the purchase or lease of sites for buildings, or for the purchase of furniture and for keeping the building in repair, thereby creating a partnership of the state and local interest.

The Kelly Act of 1853 marks another important milestone in the story of increased state support for the school. It

had become evident that the income in the state school funds was not sufficient to provide any large part of the necessary funds for the growing numbers of children to be educated. State funds were still being supplemented by fees from the parents. This act provided that one-fourth of the revenue of the state be distributed to the schools to augment the income from the state, county, and township funds. This piece of legislation established a precedent of appropriating one-fourth of the state revenue for schools which continued from 1853 to 1887, with the exception of the period during the Civil War.

The Kelly Act of 1853 was augmented and more firmly established by making a provision in the Constitution of 1875, that hereafter at least 25% of the state revenue, exclusive of the interest and sinking fund, to be applied annually to the support of the public schools. The Constitution of 1875 also created the local school organization as we know it today. The local district was given the authority to levy a tax on property for school purposes, within a limit to the maximum that could be voted.

The responsibility of the state to participate in the support of the public schools was further assumed in 1887. It was in this year that the General Assembly appropriated for the first time more than the minimum as set forth in the Constitution of 1875. This Assembly set aside one-third

of the ordinary revenue paid in to the treasurer for the schools. This Assembly set a precedent which was continued from 1887 to 1955 by the state assuming support at the rate of one-third of the ordinary revenue.

At the turn of the twentieth century it was thought by many people that Missouri had created too many districts when the total had exceeded 10,000. In 1913 a step was made for creation of larger districts by providing for a means of consolidating school districts. The legislature provided for aid for current expenses as well as construction aid. Many districts were created under the Consolidation Law of 1913.

With the rapid growth and expansion of the schools, the formation of many new high schools, the inability of a great number of districts to finance the program they desired, and the shortcomings of recent legislation, many began to advocate a complete revision of the laws relating to state support and distribution of money to the schools following World War I. As a result of the demand for more adequate state support, the General Assembly in 1929 authorized the appointment of a survey commission to study the problems mentioned above and then to make recommendations to the next session of legislature. Two prominent educators, Dr. George D. Strayer and Dr. N. L. Englehart from New York, were employed by the commission as directors of the survey.

As an outgrowth of the agitation for improved legislation and the educational survey by the commission, an act was passed in 1931 known as the 1931 School Law. One of the important parts of the law pertained to the apportionment of the state money. The purpose of the act was to guarantee to every person between the ages of 6 and 20 the minimum of eight months schooling each year. An amount of $750 for every elementary teaching unit and $1000 for every high school teaching unit was guaranteed to each district in the state in order that the schools might be in operation for the minimum term as specified. To participate in this program the local district was required to levy a property tax of 20¢ on the $100 of assessed valuation. Teaching units were defined in terms of ADA and teachers employed. A part of the minimum program was $3 per month for resident pupils transported two or more miles when the transportation was approved by the voters of the district and the method was approved by the state superintendent of schools.

From the minimum guarantee was deducted the receipts of the yield of the 20¢ tax on assessed valuation of the district and the amounts received from the county interest fund, township interest fund, and the railroad and other utility taxes received for school purposes the preceding year.

The law provided for a second level apportionment after the first level was paid in full. The second level was based on two factors: one was a kind of certificate held by the teacher, and the other was 1.6¢ times the total number of days the resident pupils attended the preceding year. In 1943 an act was passed which provided that after the first and second level apportionments had been met in full the excess funds should be apportioned equally among all the districts of the state in proportion to the number of teaching units reported the preceding year. The first payment of the third level was for the school year 1943-44.

During 1954 a joint legislative committee conducted a survey of the public schools in Missouri. They were assisted in this work by a citizens advisory committee of 31 lay and professional members. As a result of their recommendations a new system of distribution of state aid was adopted by the legislature in 1955. This method has become known as the Foundation Program. It was the purpose of the Foundation Program to distribute state funds in order that a minimum level of educational opportunity measured in dollars below which no district would be permitted to fall. There were several facets of the program.

The first part of the Foundation Program was known as the Equalization Quota. It was determined for each district by multiplying the ADA of resident pupils times $110. From

this amount was to be deducted receipts from the levy of $1 times the assessed valuation plus county and township funds and receipts from public utility taxes, as well as intangible taxes.

The second phase of the Foundation Program was known as the Flat Grant. Each district would receive an amount equal to the ADA of students attending school in the district times $75. Each district was to receive this amount without any deductions being taken.

The third part was known as the Teachers Incentive. It was based upon the number of hours individual teachers would have in a particular district. Those districts with teachers who had earned from 90 through 119 semester hours would receive $100 per instructor. The district would receive $200 for all teachers having 120 through 149 semester hours and would receive $300 for those having 150 semester hours or more.

The Foundation Program, as enacted in 1955, was not fully financed until the school year 1957-58. At that time another joint committee was appointed to make recommendations for its improvement.

CURRENT SUPPORT PROGRAM

The present system of distribution of state funds to Missouri may be characterized by the adding of one phase of

distribution to another. The legislatures have had a tendency to add a new method or make a revision of one of the methods to the system rather than to repeal any form of distribution. Because of this, Missouri is distributing money under fifteen different classifications or items. In contrast to the other states in the nation it is found that there are only four states with more methods of distributing state money than Missouri now employs.

FOUNDATION PROGRAM

A major portion of state support to the public schools is made through the provisions of the Foundation Program. In the year 1966-67 over 80% of the funds were allocated under this statute. There are three significant parts.

I. Equalization Quotient

The first consideration under the Foundation Program is known as the Equalization Quotient. In 1955 it was $110 minus the deductions as listed by law. This amount has been increased in subsequent general assemblies until this year it is $139.75 per student in ADA. This represents an increase in the last 13 years of the Equalization Quotient of only 27%. In 1963 the General Assembly added the second step to the Equalization Quotient by providing $8 per student for those districts which levied $2.75 for school purposes

based on 30% of the true valuation of the district as determined by the Missouri Tax Commission. This has been increased to $14 per student.

II. Flat Grant

The act of 1955 provided that each district would receive $75 for each child attending school within the particular district, with no deductions as provided for in the Equalization Quotient. Since that time this amount has been increased to $132.50. This represents an increase of 77% in the Flat Grant which is sometimes known as Additional Amount.

III. Teacher Preparation

In 1955 $100 was distributed to a district for each teacher with college credit ranging from 90 to 119 semester hours. Since that time this bracket has been discontinued. The original act provided that $200 per teacher would be appropriated for those having 120 through 149 semester hours. Since that time this amount has been increased to $320 for an increase of 60%. For those teachers with over 150 semester hours of college credit the school districts received $300 in 1955. At the present time this has been increased to $492, showing an increase of 64%.

TRANSPORTATION

From 1932 through 1955 districts were reimbursed $3 per month for each child transported providing the transportation was approved by the State Department of Education. Although the Transportation Act of 1955 was not a part of the Foundation Program, transportation aid was increased during the same General Assembly of which the Foundation Program was developed. At this time a sparsity factor was included. For those districts transporting up to 2.9 students per mile traveled the district would receive $4 per child per month. For those transporting from 3.0 to 3.9 per mile traveled the district would receive $3.50. The heavily populated districts transporting 4 or more per mile traveled would receive no increase and would continue to qualify for $3 per month. In 1963 the General Assembly increased the amounts to $4.80, $3.64, and $3.10 respectively. It was improved again in 1965 and the amounts received by the district ranged from $3.25 for the heavily populated districts, $3.85 for those in the medium population districts, to $6 for the districts transporting from 0 to 2.9 per mile traveled.

AID FOR BUILDINGS

Legislation for building aid in Missouri has come about when the legislatures have had an interest in

encouraging districts to form consolidated or enlarged districts. Each legislative act of building aid has continued to remain on the books since it was first enacted.

In 1913, aid for a central building was provided. The maximum amount which can be provided under this act is $2000 per construction.

Aid for abandoned buildings was enacted in 1931. This act provided that school districts may be paid $1000 for each abandoned school building provided that the enlarged district would construct a central building approved by the State Department of Education.

The third and last building construction aid was set up in the Reorganization Law of 1948 to encourage the formation of reorganized districts. Under this act funds from the state must be matched by the local district. Any reorganized district was eligible for $25,000 or one-half of the cost of construction, whichever was smaller. At the present time larger districts are eligible at the rate of $100 per student enrolled with a maximum of $50,000. The district must also match this amount. Districts of enrollment under 250 continue to be eligible for $25,000.

FREE TEXTBOOK

The state fund for free textbooks comes from an ear-marked source making for a fluctuating amount available

from year to year. It is collected on all insurance business done in the State of Missouri and is distributed on the basis of enumeration which is only indirectly related to the need for books and supplies in the district. The amount per enumerated child usually is less than $7 per year.

OTHER STATE AIDS

In addition to the classifications of aid discussed previously, the state provides help for instructors of students who deviate from the norm. This is in the form of speech correction instruction and for students of mentally retardation. The state also provides a very small amount for orphan aid. In addition to these, the state acts as an agent in distributing funds which have been provided by the Federal Government. These funds have not been considered in this study.

REORGANIZATION OF SCHOOL DISTRICTS

In 1947 the 64th General Assembly enacted the Missouri District Reorganization Law. It provided for careful study in planning of district reorganization and the submission of proposed districts to the voters. The act also provided that each county in the state would have a county board of

education, the primary duty of which was to plan for the reorganization of districts. The law provided that on or before November 1949 that a proposed plan for reorganizing districts within a county was to be submitted to the voters and that a second plan be submitted within two years from the date of the previous election for all proposed districts that were not adopted. Thereafter the law provided for county boards of education to continue to study the county school system and submit subsequent proposals as conditions might warrant.

It is interesting to note that at the close of the 1947-48 school year there were 8422 school districts in the state. Of this number 686 were high school districts and 7736 were non-high school districts. Due to this reorganization law and the impetus given to the enlargement of districts by the act, the number has been reduced to 815 school districts on July 1, 1967. Of this number 478 were high school districts, leaving 337 offering elementary education only. During the 19 years the reorganization law has been in effect, elementary districts in the state have been reduced 94%, while high school districts have only been reduced 30%.

An examination of enrollments in the grades nine through twelve of the 478 high school districts reveals that Missouri has 93 high schools with an enrollment

of less than 100. There are an additional 128 having an enrollment between 100 and 200. Another 88 schools enrolled less than 300 students. This makes a total of 309 or 65% of the high schools in the state enrolling less than 300 students in high school.

In 1949 the State Department of Education of Missouri adopted a system of classification of school districts for the state. There were three levels known as Class A, Class AA, and Class AAA. This classification is based upon both quality and quantity with Class AAA being the highest classification any district can earn in the state. An examination of the enrollment in school districts from grades one through twelve compared with the classification showed that the average Class A district enrolls 300 to 600 pupils while the average Class AA district enrolled from 900 to 1200 pupils, and the average AAA district enrolled from 2000 to 3000 pupils. It would appear that in order for the state of Missouri to improve education based upon the classification system now in effect, it will be necessary to combine high school districts in order to have an enrollment sufficient in number before the education opportunities of students can be greatly improved.

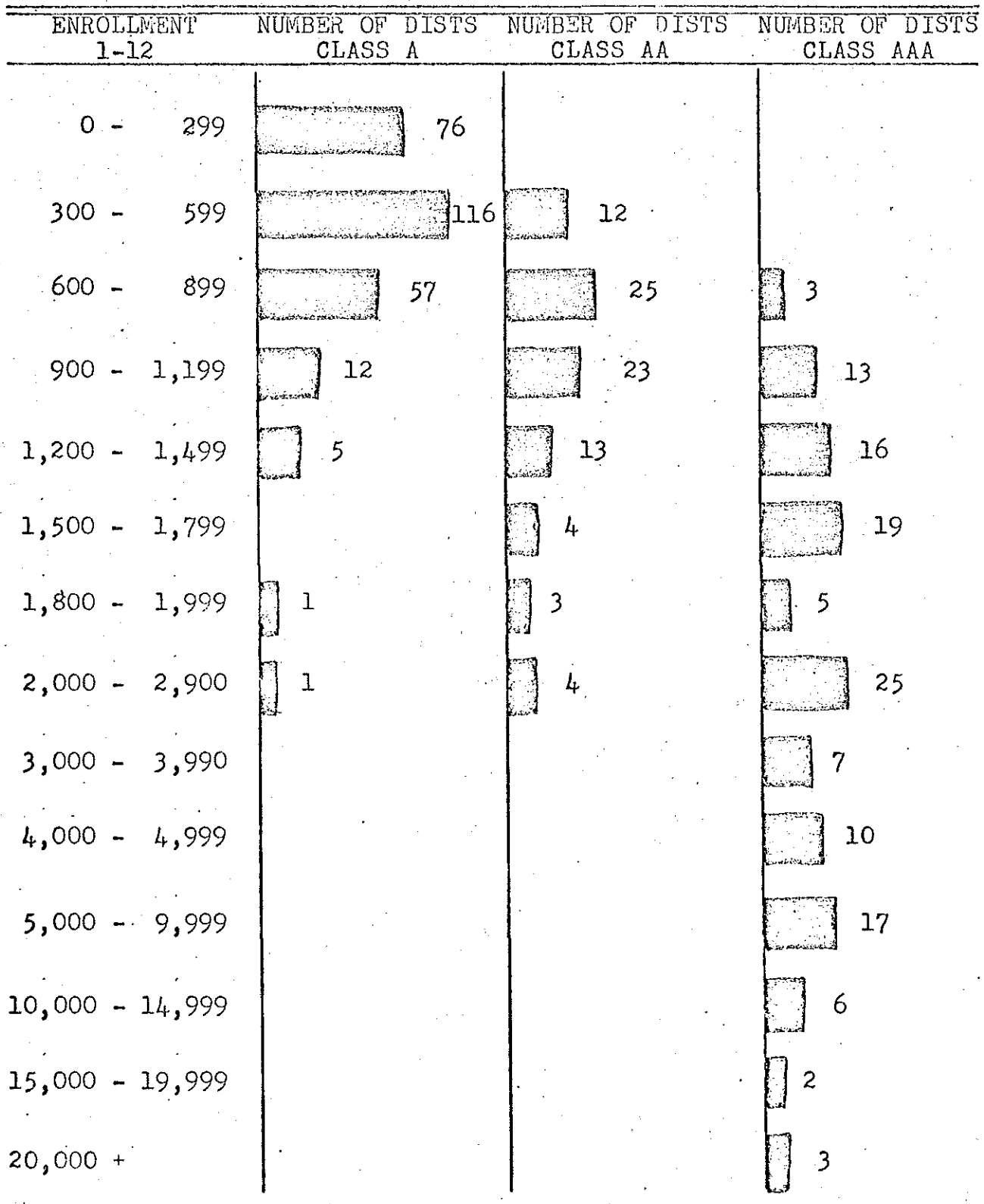
SELECTED COUNTIES STUDIED

In this paper a sampling of counties for the state of Missouri was selected in order that the financial condition

ENROLLMENT SIZE FOR GRADES 9-12 IN TWELVE YEAR
SCHOOL DISTRICTS OF MISSOURI
1966-67

HIGH SCHOOL ENROLLMENT	NUMBER OF SCHOOL DISTRICTS	CUMULATIVE TOTAL
0 - 99	XXXXXXXXXXXXXXXXXX 93	93
100 - 199	XXXXXXXXXXXXXXXXXXXXXXXXX 128	221
200 - 299	XXXXXXXXXXXXXXXXX 88	309
300 - 399	XXXXXXXXXX 43	352
400 - 499	XXXXXXXXX 37	389
500 - 599	XXXX 16	405
600 - 699	XXX 13	418
700 - 799	XX 9	427
800 - 899	XX 6	433
900 - 999	X 1	434
1000 - 1499	XXX 15	449
1500 - 1999	XX 8	457
2000 - 2499	X 5	462
2500 - 2999	X 6	468
3000 & OVER	XX 10	478

The Relationship of Enrollment in School Districts and Classification in Missouri - 1966-67



of each school district in these counties might be examined. In the Department of Supervision of the State Department of Education the state of Missouri is divided into eleven supervisory districts. It includes every county in the state of Missouri. From each supervisory district two counties were selected. This provided for a good distribution over the entire state. Since the state is so diversified, it was necessary to have some counties which were quite rural with a very light population, and also to have some in urban areas. Both rural and urban counties are included in the study. In the twenty-two counties selected there were 98 high school districts, 50 operating elementary districts, and 16 closed districts. The three-director operating elementary districts were providing education for 1194 students and were sending 513 students to nearby high schools for their education. The closed elementary districts were sending 103 elementary children and 153 high school students to other districts. The six-director elementary schools had an elementary enrollment of 5544 and were sending 1985 high school students to other districts. This made a total of 9492 students in the elementary districts. The 98 high school districts had a combined enrollment of 239,227 students which represents approximately 24½% of all Missouri students enrolled in the schools of 1966-67.

Of the twenty-two counties in this study, eleven were completely organized in order that every child was in a high school district. Those counties were:

Barton	Macon
Cedar	Miller
Clinton	Morgan
Daviess	St. Charles
Knox	Worth
Lincoln	

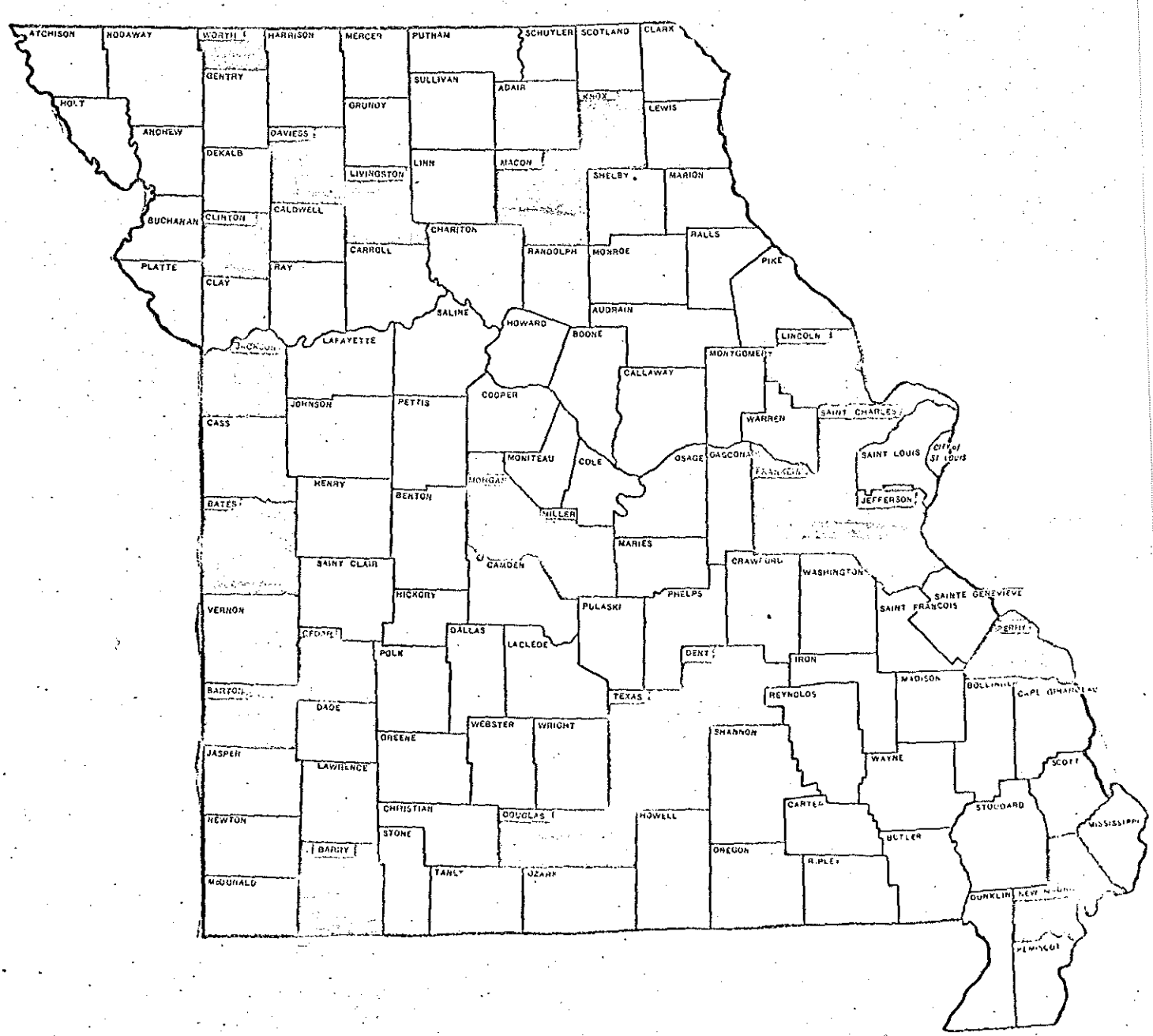
There were four additional counties which had no three-director districts, but there were one or more six-director districts in the county. These counties were:

Bates	Jefferson
Dent	Livingston

The remaining seven counties had one or more three-director districts. These counties were:

Maries	New Madrid
Douglas	Perry
Franklin	Texas
Jackson	

The Twenty-Two Counties Used to Study the Effects of State Support and Distribution in Missouri for 1966-67

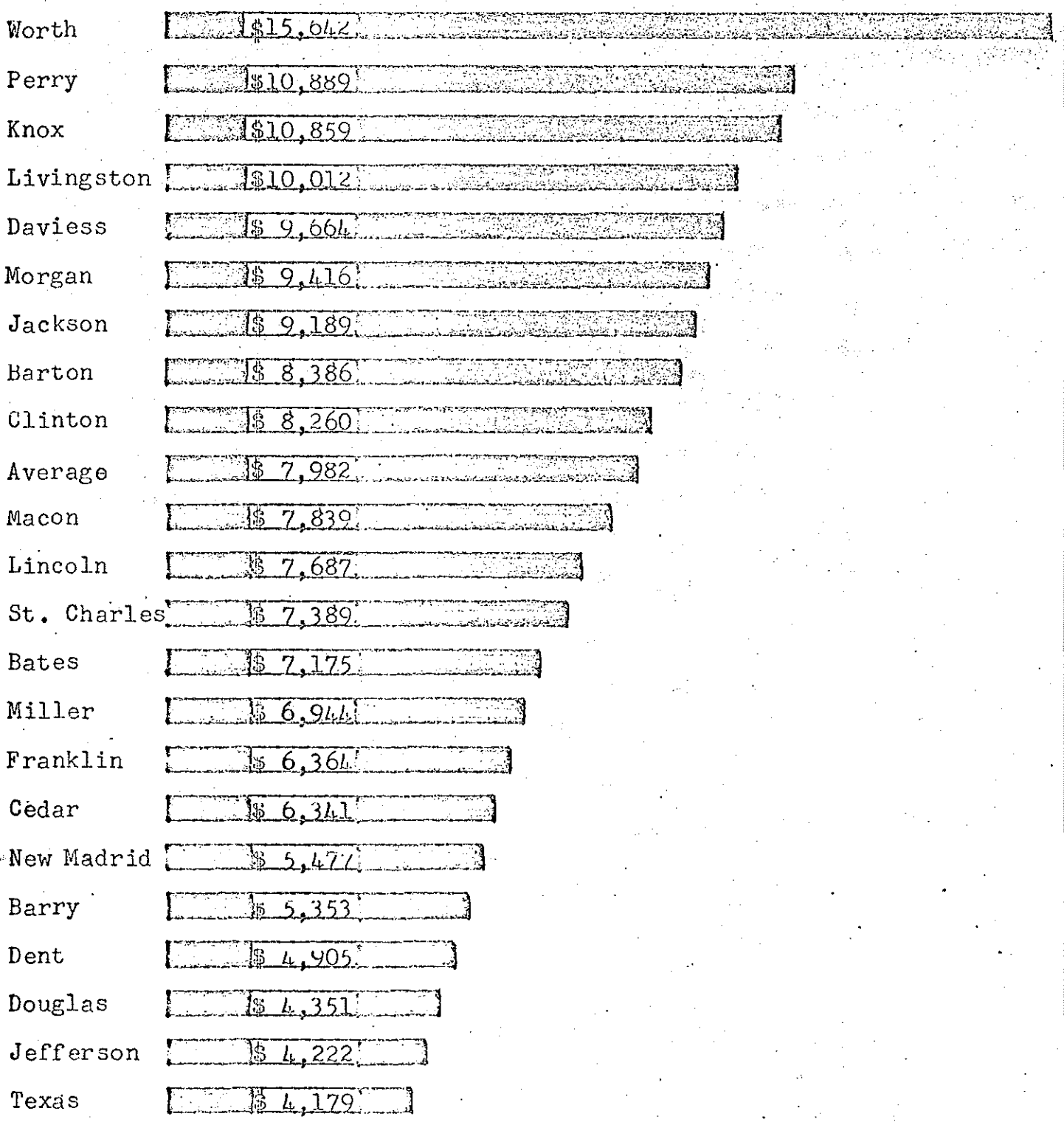


Since local school districts in Missouri derive much of their income from the property tax, an examination of the assessed valuation back of each child in the counties was made. The range was from $4179 in Texas county to $15,642 in Worth County. The mean assessed valuation for the twenty-two counties was approximately $8000, which was somewhat less than the average for all 114 counties.

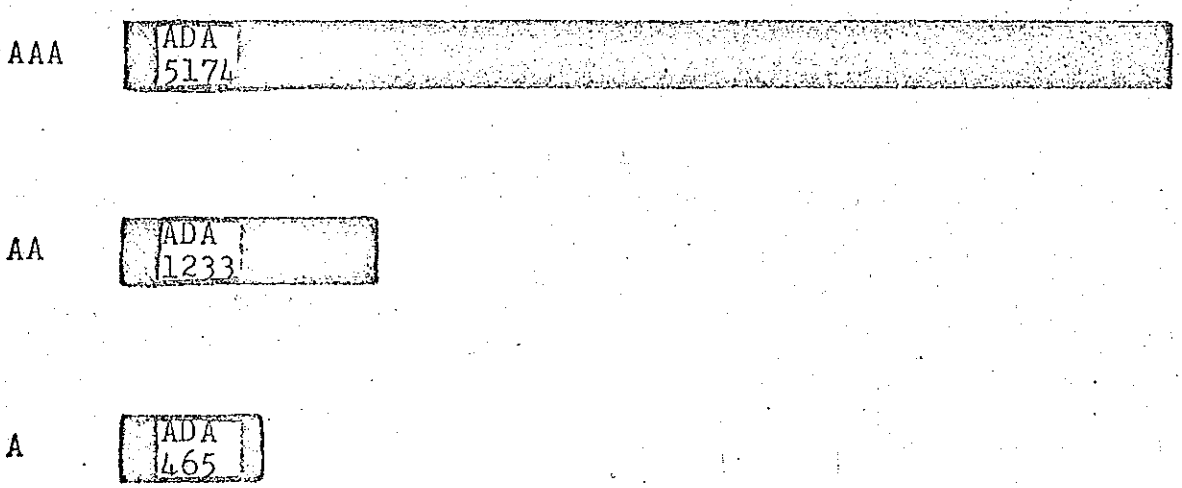
An examination of the tax levies for the various districts in the twenty-two counties revealed that the AAA schools had an average tax levy of $3.47. The AA high school districts had a somewhat smaller one of $3.32, while the A class districts had an average levy of $3.01. The elementary districts' levies were somewhat smaller than for the high school districts. The six-director elementary schools had an average tax levy of $2.88. The three-director operating schools had a levy of $2.39. The closed elementary districts were paying for the education of their young people with a levy of $1.53. One of these districts had a total levy of twenty cents.

The classification of the high school districts in the twenty-two counties followed very closely what was true for the entire state. Of the A class schools the average enrollment was 465. The AA schools had an average enrollment of 1233. The AAA schools had an average enrollment of 5174.

The Assessed Valuation Back of Each Child by Counties
in the Selected Twenty-two Counties
1966-67



Average ADA by Classification of the High School Districts in Selected Schools of Twenty-two Counties 1966-67

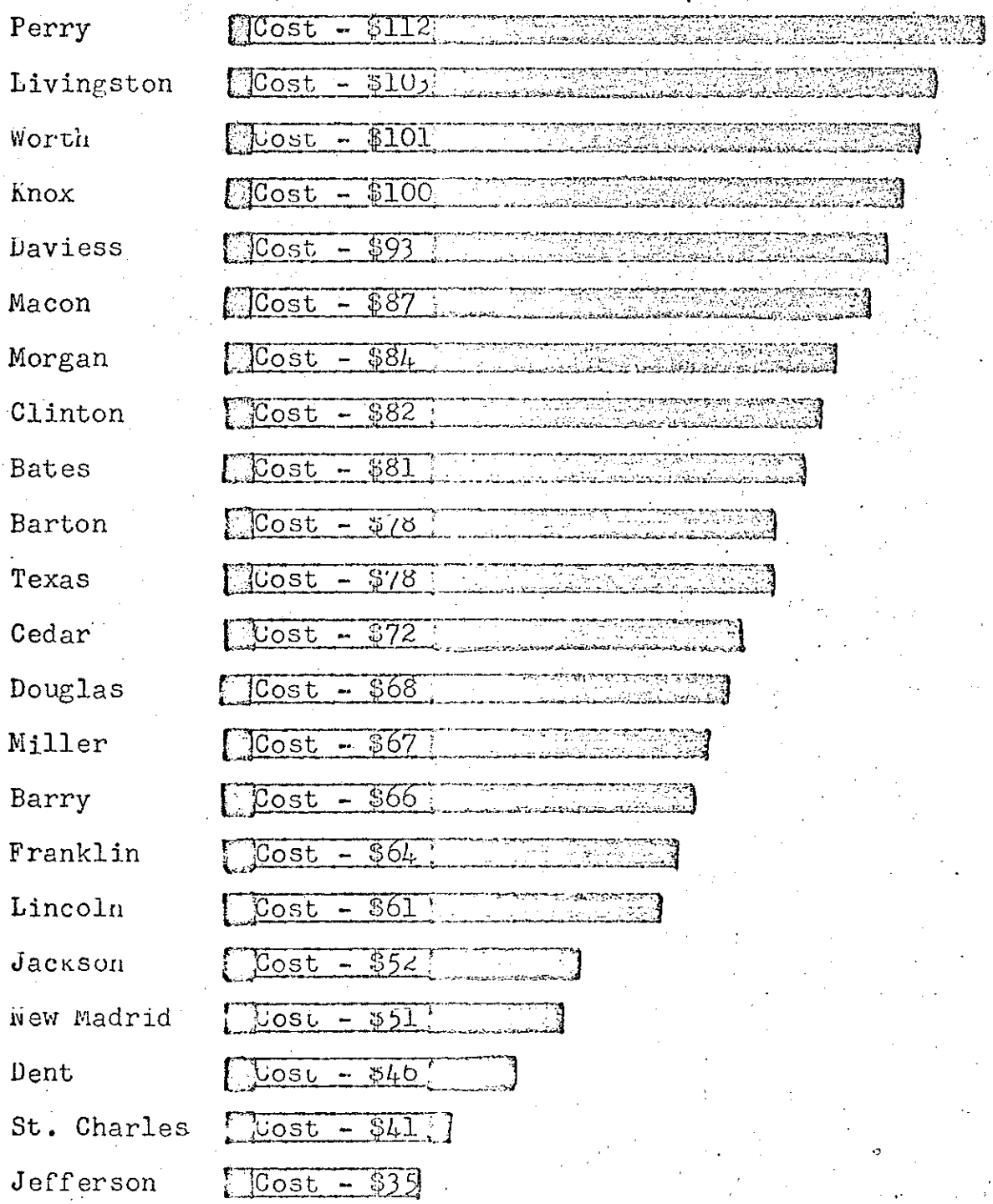


Many school districts in Missouri must transport students to school before they are available to teach. This one item alone has become a major financial consideration for many districts. During the 1966-67 school year approximately 48% of the students were transported to and from school. If districts are made larger, the growth of transportation will continue to expand, and will become an important consideration in all school operations.

The transportation in the districts of the twenty-two counties studied showed that there was a wide difference in the annual cost per student transported. It ranged from an average expenditure of $35 per student in Jefferson County to a cost of $112 per student in Perry County. It was found that 17 of the twenty-two counties had an expenditure for transportation which was greater than the maximum state aid as provided by law.

In examining the finances of the districts with the lowest cost in transportation it was determined that the 10 districts at the bottom of the scale had an average cost of $32 per student per year. At the other end of the scale the 10 districts with the highest cost averaged $113 per student per year. An examination of the counties with the lowest cost would indicate that these were the ones with a heavy population per square mile, while the counties with the highest cost had a tendency to be very thinly populated.

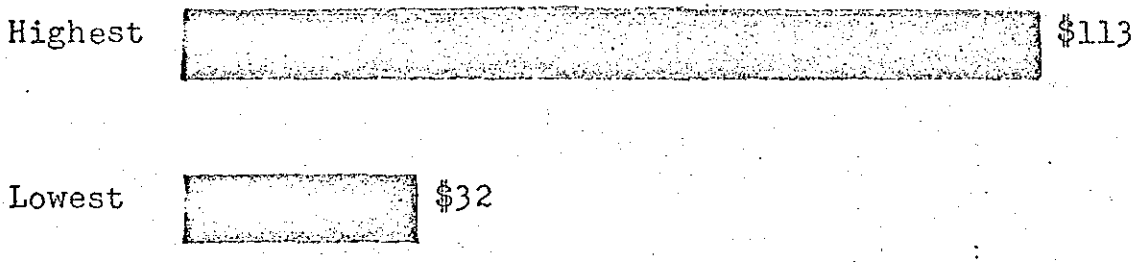
The Average Cost per Student for Transportation of the High School Districts in the Selected Twenty-two Counties 1966-67



The Average Cost in Transportation per ADA in the 10 School Districts with the Highest Cost and the 10 School Districts with the Lowest Cost in Selected Schools of Twenty-two Counties 1966-67

COUNTY	DISTRICT NO.	NAME	AMOUNT IN DOLLARS
Districts with lowest cost			
Jefferson	R-I	Northwest	$ 35
Jackson	C-2	Raytown	35
Jackson	C-4	Grandview	34
Jefferson	73	De Soto	33
St. Charles		St. Charles	33
Jefferson	C-I	Windsor	31
St. Charles	R-III	St. Charles Co.	31
Jefferson	R-VI	Festus	29
Jackson	30	Independence	29
Jefferson	47	Crystal City	26
Mean - - - - - - - -			$32
Districts with highest cost			
Livingston	R-IV	Wheeling	$168
Worth	R-II	Sheridan	119
Daviess	R-6	Winston	117
Macon	C-8	Callao	115
Perry	32	Perryville	112
Macon	C-5	New Cambria	104
Knox	R-I	Knox County	100
Macon	C-6	Ethel	100
Macon	R-II	Macon County	97
Daviess	R-VII	Tri County	94
Mean - - - - - - - -			$113

The Average Cost in Transportation per ADA in the 10 School Districts with the Highest Cost and the 10 School Districts with the Lowest Cost in Selected Schools of Twenty-two Counties 1966-67



There were some districts in the study which could provide transportation for students transported with as low as 3¢ levy per $100 assessed valuation. On the extreme end of the scale there was one district which would require a levy of 70¢ to pay for the transportation alone. The 10 districts with the highest cost in transportation based on the tax levy needed ranged from 37¢ to 70¢.

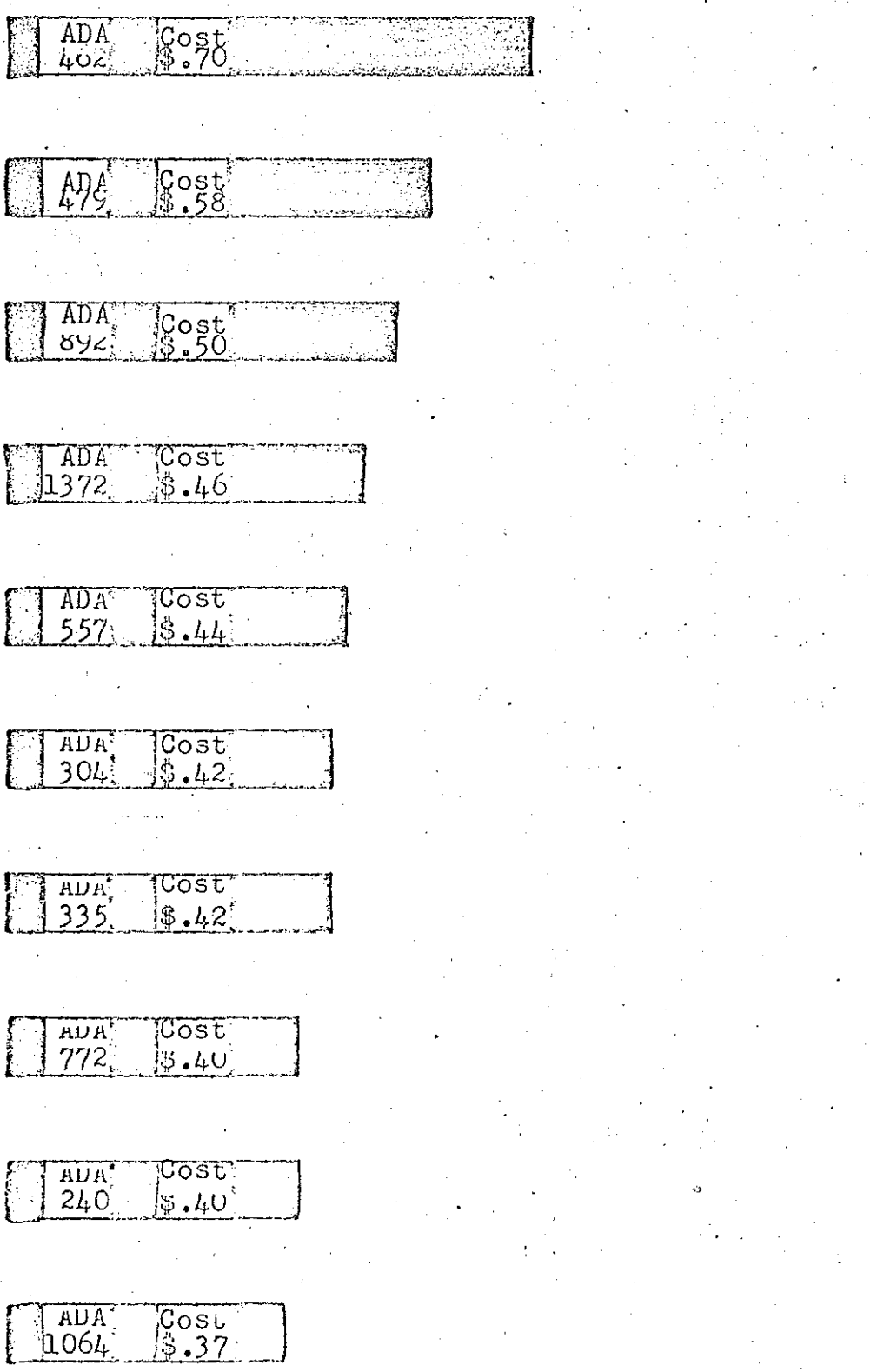
This seems to be sufficient evidence to show that many districts are being handicapped by finding it necessary to spend local tax money in order to provide transportation to have their children at school each day. In contrast to this, some districts in the state need to spend none or very little in order to do this. The financing of transportation seems to be a very important factor in the proposal that districts should become larger in order that a more desirable program might be offered. Because of this, this factor will probably come in for heavy consideration in writing a financial program conducive to the reorganization of school districts.

The amount of funds expended for each student in ADA of the 98 high school districts indicated that there is a very wide variance between the lowest and the highest. The lowest figure spent by any district was $313. The others ranged to a maximum of $800 per student. The average cost of the 10 districts with the lowest cost was $391 while

Tax Levy Needed at the Local Level to Furnish Transportation of the 10 School Districts with the Highest Cost in Selected Schools of Twenty-two Counties 1966-67

COUNTY	DISTRICT NO.	NAME	AMOUNT IN DOLLARS
Barry	R-V	Southwest	$ .70
Texas	R-V	Plato	.58
Barry	R-IV	Cassville	.50
Perry	32	Perryville	.46
Worth	R-I	Worth	.44
Bates	R-I	Miami	.42
Miller	R-IV	St. Elizabeth	.42
Cedar	R-I	Stockton	.40
Miller	R-III	Tuscumbia	.40
Texas	R-IV	Cabool	.37

Tax Levy Needed at the Local Level to Furnish Transportation of the 10 School Districts with the Highest Cost in Selected Schools of Twenty-two Counties 1966-67



The Average Cost per Student in ADA of the 10 School Districts with the Highest Cost and the 10 School Districts with the Lowest Cost in Selected Schools of Twenty-two Counties
1966-67

COUNTY	DISTRICT NO.	NAME	AMOUNT IN DOLLARS
Districts with Lowest Cost			
Lincoln	R-III	Troy	$415
Franklin	C-2	Sullivan	412
Jefferson	R-V	Dunklin	410
Jackson	30	Independence	409
Jackson	R-I	Fort Osage	402
New Madrid	R-II	Risco	401
Jefferson	C-I	Windsor	388
Jefferson	R-I	Northwest	387
Jefferson	C-6	Fox	373
New Madrid	R-I	Portageville	313
		Mean - - - - - - - -	$391
Districts with Highest Cost			
Daviess	R-VI	Winston	$866
Livingston	R-IV	Wheeling	811
Macon	C-6	Ethel	756
Barry	R-II	Purdy	741
Worth	R-II	Sheridan	698
Bates	R-VIII	Hume	695
Knox	R-I	Knox County	643
Franklin		Washington	619
Worth	R-I	Worth	603
Lincoln	R-I	Silex	591
		Mean - - - - - - - -	$702

The Average Cost per Student in ADA of the 10 School Districts with the Highest Cost and the 10 School Districts with the Lowest Cost in Selected Schools of Twenty-two Counties 1966-67

	ADA	Cost
10 Highest Cost	466	$702
10 Lowest Cost	3376	$391

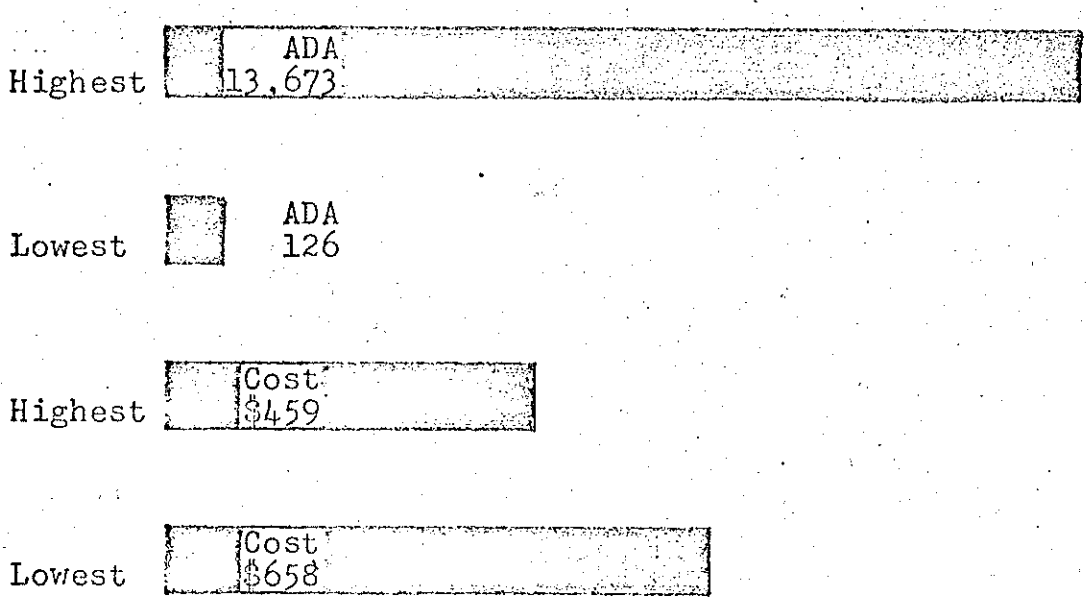
the average cost of the 10 districts with the highest expenditure averaged $702. This makes a difference of $311 per student per year spent on education in the schools of the highest expenditure and of the lowest. The higher expenditure per student for education had a tendency to be in the districts with the smallest ADA, while the districts with the largest ADA had a tendency to be near the lower quartile in expenditure. The 10 school districts with the smallest ADA had an average expenditure of $658. The 10 districts with the largest ADA had an average expenditure of $459. Since the smaller districts in the area tended to be Class A schools and the districts with the larger ADA were the Class AAA schools, it might be concluded that the smaller districts were paying more for an inferior school while the larger districts were enabled to secure a superior education with a substantially lesser amount of money. For this study all Class A schools had an average cost of $531. The Class AA schools had an average cost of $470 while all Class AAA schools had an average cost per student of $468.

One item in the Missouri Uniform Financial Accounting used by all high school districts is that for administration. It was found that the cost of the administration for the 98 high school districts in the study ranged from a low of $8 per student to a high of $111. The 10 high school districts

The Average Daily Attendance of the 10 School Districts with the Highest ADA and the 10 School Districts with the Lowest ADA, Plus the Cost per Child, in Selected Schools of Twenty-two Counties 1966-67

COUNTY	DISTRICT NO.	NAME	AMOUNT IN DOLLARS
Districts with Smallest ADA			
Daviess	R-VI	Winston	$866
Livingston	R-IV	Wheeling	811
Macon	C-6	Ethel	756
Worth	R-II	Sheridan	698
Bates	R-VIII	Hume	695
Daviess	R-I	Coffey	583
Macon	C-VIII	Callao	558
Daviess	R-III	Jameson	554
Macon	C-I	Elmer	583
Livingston	C-5	New Cambria	520
		Mean - - - - - - - -	$658
Districts with Largest ADA			
Jackson	33	Kansas City	$562
Jackson	58	Center	529
Jackson	C-4	Grandview	497
Jackson	R-VII	Lee's Summit	491
St. Charles		St. Charles	468
Jackson	C-2	Raytown	440
Jackson	C-I	Hickman Mills	432
Jackson	30	Independence	409
Jefferson	R-I	Northwest	387
Jefferson	C-6	Fox	373
		Mean - - - - - - - -	$459

The Average Daily Attendance of the 10 School Districts with the Highest ADA and the 10 School Districts with the Lowest ADA, Plus the Cost per Child, in Selected Schools of Twenty-two Counties 1966-67



The Cost per Student by Classification of Schools in Selected Schools of Twenty-two Counties 1966-67

Class	Cost
A	$531.30
AA	$470.75
AAA	$468.47

with the highest cost in administration averaged $64 while the 10 districts with the smallest cost averaged $11. A study was made of the administrative costs for the 10 districts with the largest ADA. In those it was found that the administrative cost averaged $12. A study was also made of the administrative costs for the 10 smallest districts in ADA and it was found to be $62. This would indicate that the administration for small schools in the state of Missouri is costing approximately five times that of the larger school districts.

Another important expenditure item for the schools is that of instruction. In the 10 school districts with the highest cost the mean was $467. The 10 districts with the lowest cost had an average of $277. The average cost was also determined in instruction for the 10 districts with the largest ADA. It equaled $341. The average cost for the 10 school districts with the lowest ADA averaged $420 for a difference of $79.

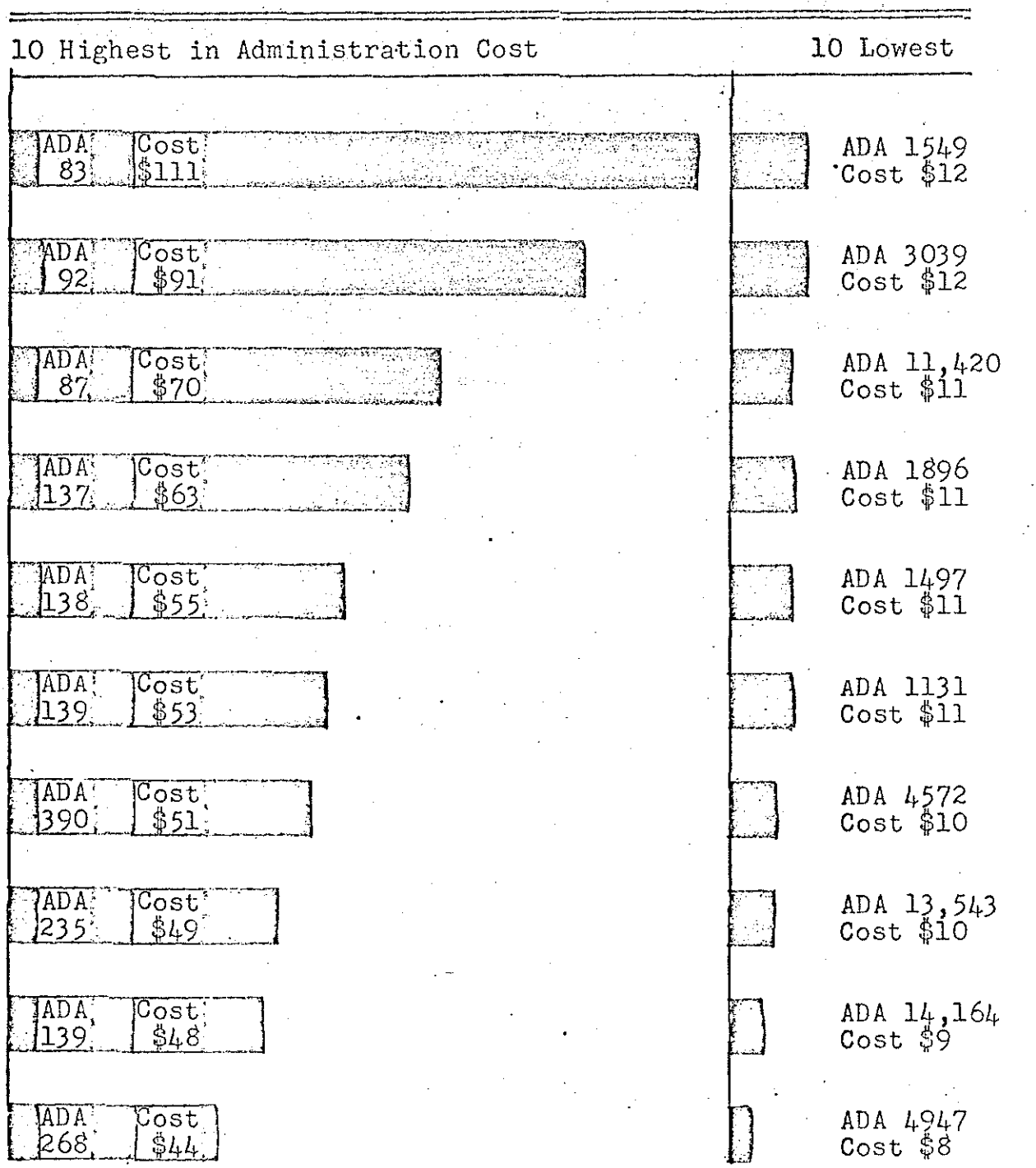
STATE AID RECEIVED PER UNIT

In examination of receipts of state support for the districts it was found that there was a great variation in what each district received per child from the state. An examination revealed that the 10 districts with the smallest assessed valuation received state aid plus $1 levy times the

The Amount of Cost per Student in ADA for Administration of the 10 School Districts with the Highest Cost and the 10 Smallest Districts with the Lowest Cost in Selected Schools of Twenty-two Counties 1966-67

COUNTY	DISTRICT NO.	NAME	AMOUNT IN DOLLARS
Districts with the Smallest Cost in Administration			
Jefferson	R-III	Hillsboro	$ 12
Jackson	R-I	Fort Osage	12
Jackson	C-I	Hickman Mills	11
Franklin	R-XI	Union	11
Douglas	R-I	Ava	11
Clinton	R-I	Cameron	11
Jefferson	R-I	Northwest	10
Jackson	30	Independence	10
Jackson	C-2	Raytown	9
Jefferson	C-6	Fox	8
Mean - - - - - - - -			$11
Districts with the Largest Cost in Administration			
Livingston	R-IV	Wheeling	$111
Macon	C-I	Elmer	91
Macon	C-6	Ethel	70
Worth	R-II	Sheridan	63
Bates	R-VIII	Hume	55
Macon	C-8	Callao	53
Barry	R-II	Purdy	51
Jackson	C-6	Lone Jack	49
Daviess	R-III	Jameson	48
Barry	R-VI	Exeter	44
Mean - - - - - - - -			$64

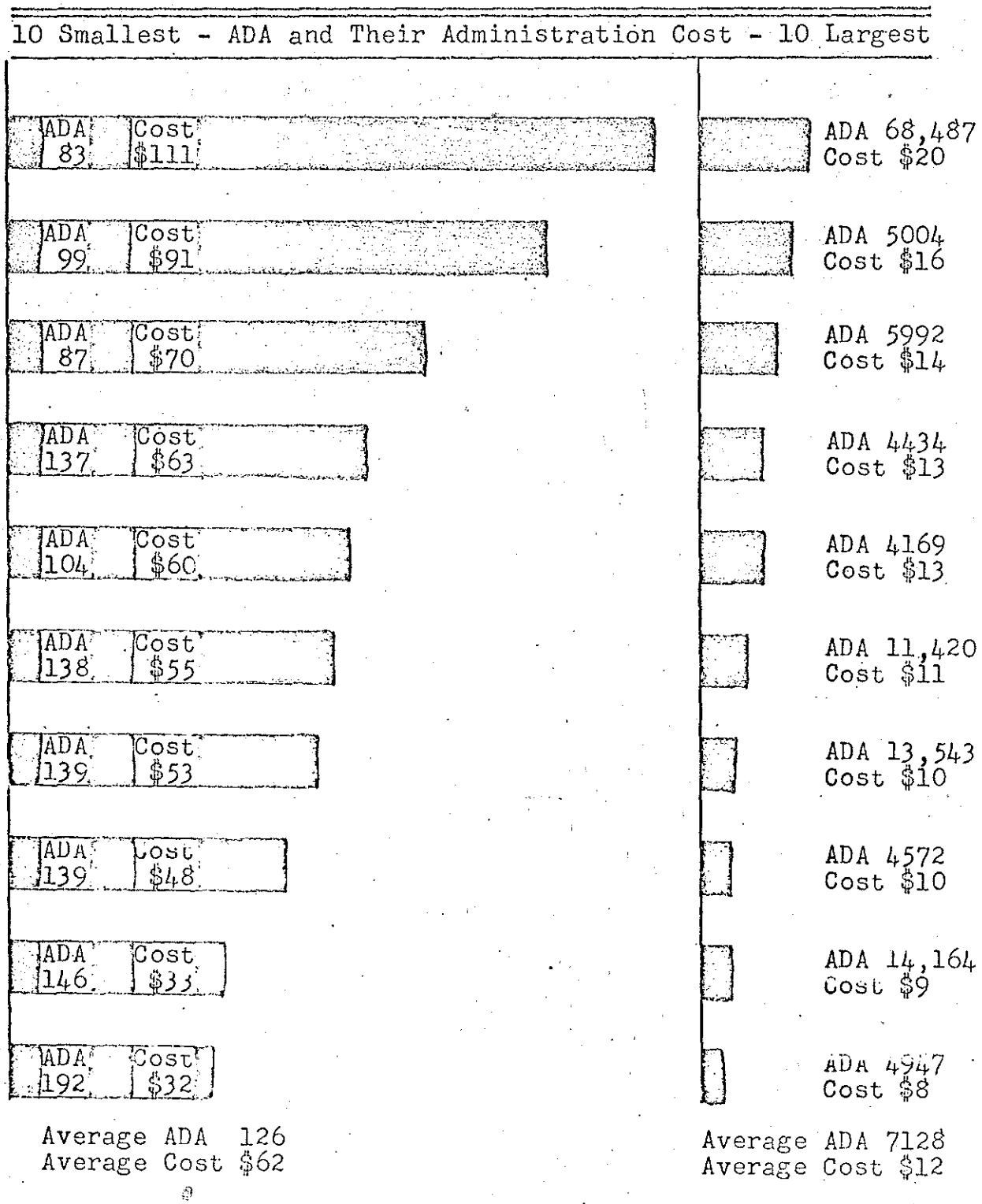
The Amount of Cost per Student in ADA for Administration of the 10 School Districts with the Highest Cost and the 10 Smallest Districts with the Lowest Cost in Selected Schools of Twenty-two Counties 1966-67



The Amount of Cost per Student in ADA for Administration of the 10 Largest School Districts in ADA and the 10 Smallest School Districts in ADA in Selected Schools of Twenty-two Counties 1966-67

COUNTY	DISTRICT NO.	NAME	AMOUNT IN DOLLARS
	Districts with Smallest ADA		
Jackson	33	Kansas City	$ 20
Jackson	58	Center	16
St. Charles		St. Charles	14
Jackson	R-VII	Lee's Summit	13
Jackson	C-4	Grandview	13
Jackson	C-I	Hickman Mills	11
Jefferson	R-I	Northwest	10
Jackson	30	Independence	10
Jackson	C-2	Raytown	9
Jefferson	C-6	Fox	8
	Mean - - - - - - - -		$12
	Districts with Largest ADA		
Livingston	R-IV	Wheeling	$111
Macon	C-I	Elmer	91
Macon	C-6	Ethel	70
Worth	R-II	Sheridan	63
Daviess	R-I	Coffey	60
Bates	R-VIII	Hume	55
Macon	C-VIII	Callao	53
Daviess	R-III	Jameson	48
Daviess	R-VI	Winston	33
Macon	C-5	New Cambria	32
	Mean - - - - - - - -		$62

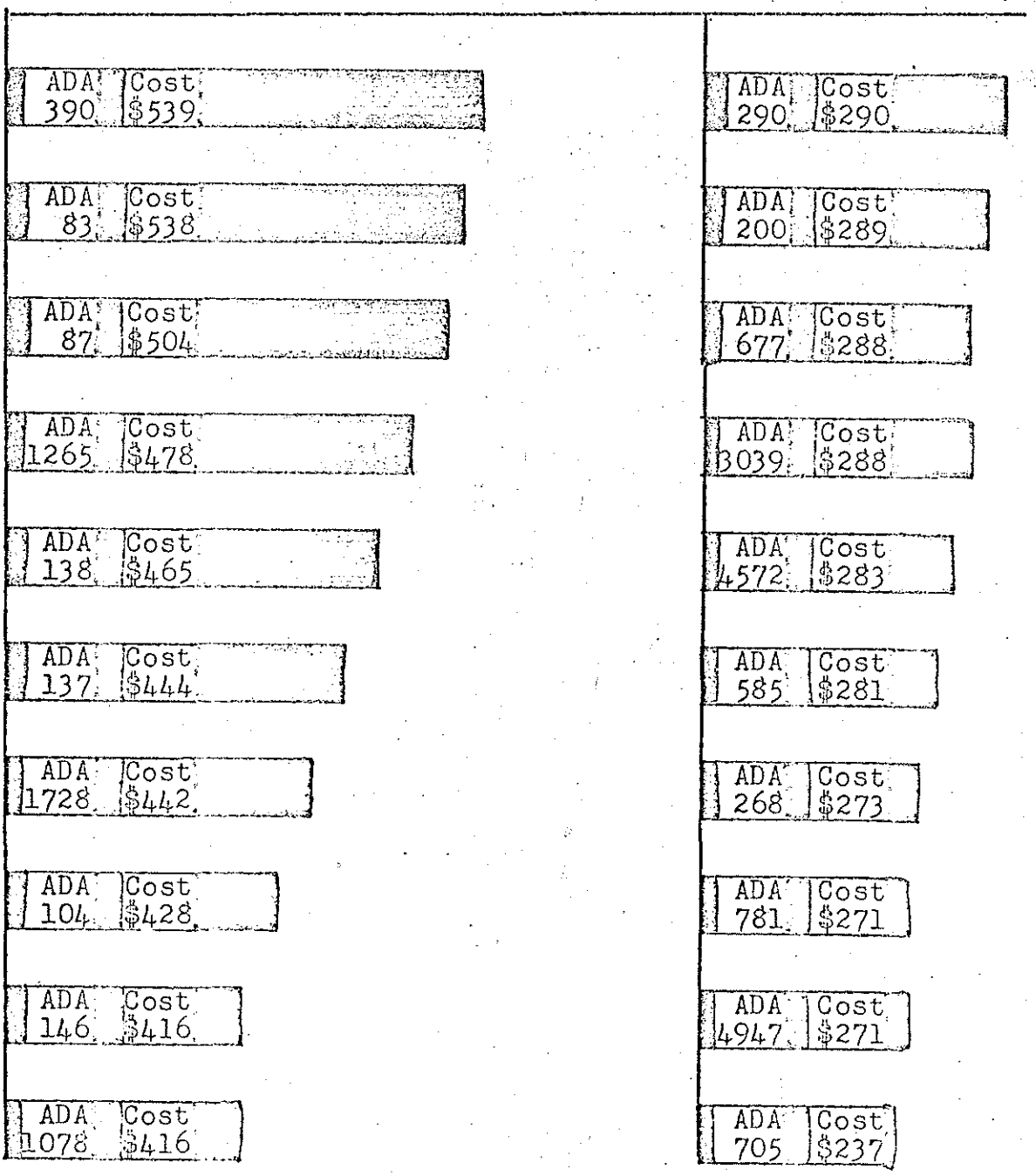
The Amount of Cost per Student in ADA for Administration of the 10 Largest School Districts in ADA and the 10 Smallest School Districts in ADA in Selected Schools of Twenty-two Counties 1966-67



The Amount of Cost per Student in ADA for Instruction of the 10 School Districts with the Highest Cost and the 10 School Districts with the Lowest Cost in Selected Schools of Twenty-two Counties 1966-67

COUNTY	DISTRICT NO.	NAME	AMOUNT IN DOLLARS
Districts with Smallest Cost in Instruction			
Lincoln	R-III	Troy	$290
Bates	R-II	Ballard	289
Lincoln	R-IV	Winfield	288
Jackson	R-I	Fort Osage	288
Jefferson	R-I	Northwest	283
Texas	R-II	Summersville	281
Barry	R-VI	Exeter	273
Henry	C-I	Windsor	271
Jefferson	C-6	Fox	271
New Madrid	R-II	Risco	237
Mean - - - - - - - -			$277
Districts with Largest Cost in Instruction			
Barry	R-II	Purdy	$539
Livingston	R-IV	Wheeling	538
Macon	C-6	Ethel	504
New Madrid	R-I	Portageville	478
Bates	R-VIII	Hume	465
Worth	R-II	Sheridan	444
Franklin		Washington	442
Daviess	R-I	Coffey	428
Daviess	R-VI	Winston	416
Knox	R-I	Knox	416
Mean - - - - - - - -			$467

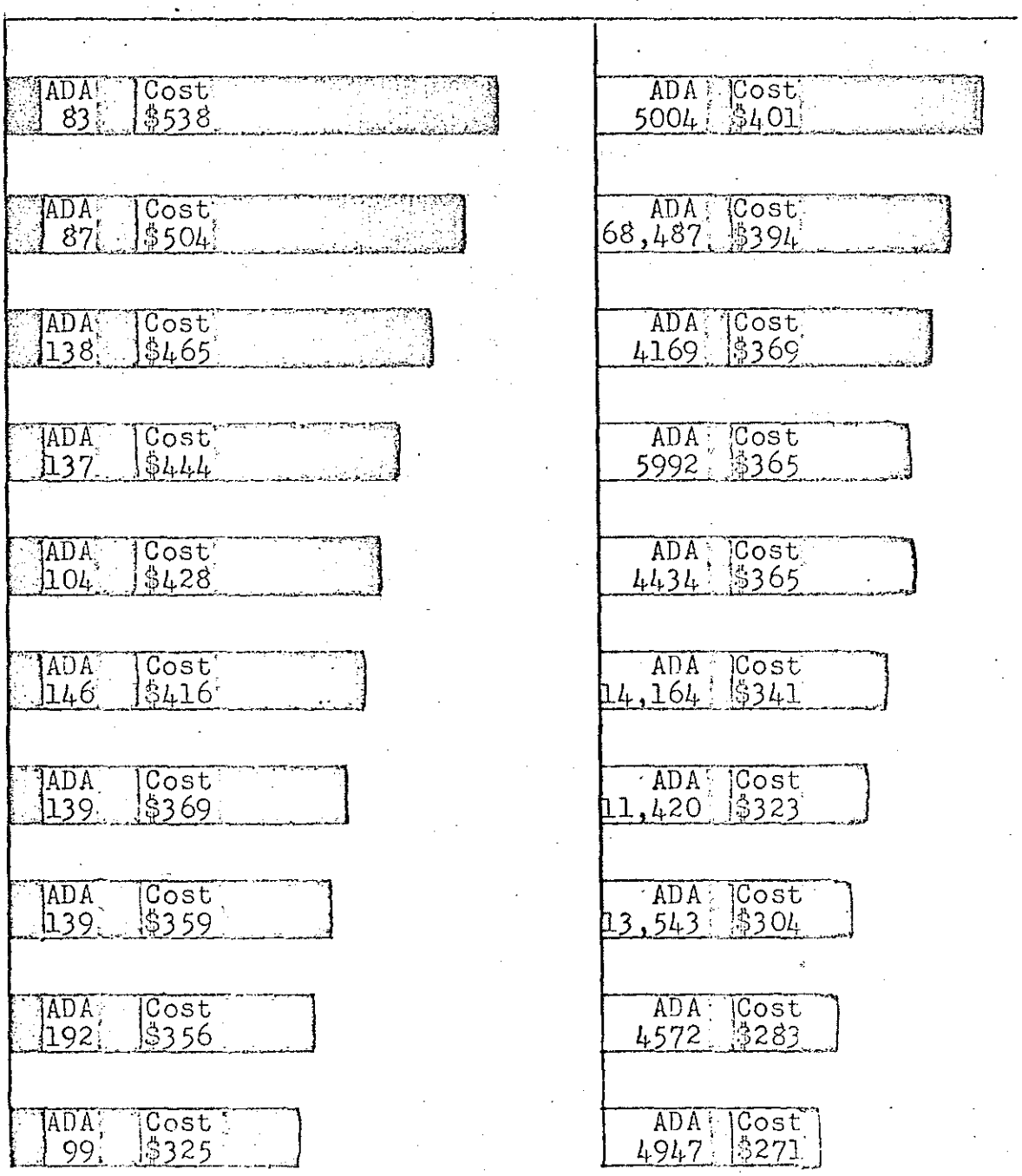
The Amount of Cost per Student in ADA for Instruction of the 10 School Districts with the Highest Cost and the 10 School Districts with the Lowest Cost in Selected Schools of Twenty-two Counties 1966-67



The Cost for Instruction in the 10 School Districts with the Highest ADA and the 10 School Districts with the Lowest ADA in Selected Schools of Twenty-two Counties 1966-67

COUNTY	DISTRICT NO.	NAME	AMOUNT IN DOLLARS
	Districts with Smallest ADA		
Livingston	R-IV	Wheeling	$538
Macon	C-6	Ethel	504
Bates	R-VIII	Hume	465
Worth	R-II	Sheridan	444
Daviess	R-I	Coffey	428
Daviess	R-VI	Winston	416
Daviess	R-III	Jameson	369
Macon	C-8	Callao	359
Macon	C-5	New Cambria	356
Macon	C-I	Elmer	325
	Mean - - - - - - - -		$420
	Districts with Largest ADA		
Jackson	58	Center	$401
Jackson	33	Kansas City	394
Jackson	C-4	Grandview	368
St. Charles		St. Charles	365
Jackson	R-VII	Lee's Summit	365
Jackson	C-2	Raytown	341
Jackson	C-I	Hickman Mills	323
Jackson	30	Independence	304
Jefferson	R-I	Northwest	283
Jefferson	C-6	Fox	271
	Mean - - - - - - - -		$341

The Cost for Instruction in the 10 School Districts with the Highest ADA and the 10 School Districts with the Lowest ADA in Selected Schools of Twenty-two Counties 1966-67



assessed valuation back of each child in the amount of $189. In contrast to this the districts with the largest assessed valuation back of each child with a $1 levy would have $312 per child to spend. This means that each child in the more wealthy districts would have $123 more to spend for the minimum $1 levy than those in the poorer districts.

Districts with the smallest ADA were receiving more per student for teacher preparation than those with the largest ADA. The 10 districts with the smallest ADA received an average of $31 per student from the state for teacher preparation. The 10 districts with the largest ADA received an average of $19 per student from the state in teacher preparation. This made for a difference of $12 per student.

The Amount Received per Student from $1 Levy on the Assessed Valuation Back of Each Child Plus the Amount of State Aid per Child in Selected Schools of Twenty-two Counties 1966-67

COUNTY	DISTRICT NO.	NAME	AMOUNT IN DOLLARS
Districts with Smallest Assessed Valuation			
Macon	R-I	Macon	$200
Jefferson	R-I	Northwest	197
Franklin	C-2	Sullivan	195
Jefferson	73	De Soto	192
Franklin	R-XV	Union	189
Franklin		New Haven	187
Jefferson	R-V	Dunklin	184
Jefferson	R-VI	Festus	183
Franklin	R-III	Franklin County	181
Clinton	R-I	Cameron	180
Mean - - - - - - - -			$189
Districts with Largest Assessed Valuation			
Worth	R-II	Sheridan	$356
Livingston	R-IV	Wheeling	351
Miller	R-II	School of Osage	331
Macon	C-6	Ethel	309
Worth	R-I	Worth	309
St. Charles		St. Charles	308
Jackson	C-6	Lone Jack	292
Barry	R-II	Purdy	291
Jackson	R-VI	Oak Grove	289
Bates	R-VIII	Hume	288
Mean - - - - - - - -			$312

The Amount Received per Student in ADA for Teacher Preparation of the Missouri Foundation Program in Selected Schools of Twenty-two Counties 1966-67

COUNTY	DISTRICT NO.	NAME	AMOUNT IN DOLLARS
Districts with Smallest ADA			
Macon	C-6	Ethel	$ 49
Livingston	R-IV	Wheeling	43
Daviess	R-I	Coffey	34
Bates	R-VIII	Hume	33
Macon	C-V	New Cambria	31
Worth	R-II	Sheridan	31
Macon	C-8	Callao	29
Daviess	R-III	Jameson	24
Daviess	R-VI	Winston	23
Macon	C-I	Elmer	15
Mean - - - - - - - -			$31
Districts with Largest ADA			
Jackson	58	Center	$ 22
St. Charles		St. Charles	22
Jackson	R-VII	Lee's Summit	21
Jackson	C-4	Grandview	20
Jackson	33	Kansas City	19
Jackson	C-I	Hickman Mills	19
Jackson	30	Independence	18
Jackson	R-I	Fort Osage	18
Jackson	C-2	Raytown	18
Jefferson	R-I	Northwest	16
Mean - - - - - - - -			$19

The Amount Received per Student in ADA for Teacher Preparation of the Missouri Foundation Program in Selected Schools of Twenty-two Counties 1966-67

	Amount in Dollars
Districts With Smallest ADA	$31
Districts with Largest ADA	$19

CONCLUSIONS AND RECOMMENDATIONS

Missouri has made significant progress in reducing the number of school districts from 8422 in 1948 to 815 by July 1, 1967. However, reorganization during this 19 year period has, to a great extent, been the combining of elementary districts with existing high schools. Within the last five years there has been a start toward the uniting of two or more high school districts into larger units. However, much more needs to be done before each student in Missouri will be in a district of sufficient size to insure him an opportunity for a high school program of adequate quantity and quality as determined by the present classification system. The state has far too many districts with high school enrollments under 300. This makes for an expensive type of education as shown in this study.

The expenditures for current costs in Missouri has increased rapidly within recent years. In spite of this effort Missouri is still below the national average when compared with the other 49 states. For 1966-67 Missouri had a current expense of $496 per student in ADA contrasted with a national average of $564. With this amount Missouri ranked 32nd.

Currently, the state is providing approximately 35% of the costs for school purposes. The recent Governor's Conference recommended that the state provide at least

be limited by the distance students can be transported. The cost of this transportation is an important expenditure in an enlarged district in rural Missouri. It was found that 17 of the 22 counties expended more for transportation than the present state aid. In order that reorganization of districts might be continued, an improvement in this state support is a must.

Recommendation. The state aid for transportation should be on a graduated scale with the maximum available to be increased from $54 to $90 per year.

AIDS FOR BUILDINGS

All three costs for buildings were established to provide incentives for the formation of larger districts. The first two are very limited in size and the one for reorganized districts is such that it does not ensure districts of sufficient size. If the incentive factor is to be used in Missouri, a complete revision of this aid needs to be considered.

Recommendation. The three aids for buildings should be deleted. Enlarged districts would qualify for building aid when the district size and building plans had been approved by the State Department of Education. Under certain conditions existing districts might be approved by the State

Department of Education for aid. Factors to be considered might be present enrollment and geographical factors which would prevent future enlargement. It is recommended that an approved enlarged district be eligible to receive from the state 20% of the approved cost of a building times the ratio of state valuation per pupil to the district per pupil valuation with a minimum of 10% and a maximum of 50% of approved costs.

TEXTBOOK FUND

Since the Textbook Fund is distributed on enumeration instead of enrollment and the amount distributed is not sufficient for books, this fund is not entirely effective.

Recommendation. The money collected for the textbook fund should be placed in the education fund as is the special cigarette tax and be distributed as a part of the Flat Grant of the Foundation Program.

OTHER RECOMMENDATIONS

All districts should be eligible for state aid based on present ADA rather than for the preceding year.

The Teacher Education and Orphan Aid provisions in the statutes should be repealed.

The three local funds, teachers, incidental, and textbook should be combined into one known as operations.

The building and debt service funds might be combined into one known as building fund.

A METHOD FOR VISUALIZING A STATE-WIDE SCHOOL REORGANIZATION PLAN

Presented to the Missouri State Department of Education in fulfillment of a contract under the Great Plains School Reorganization Project.

by Hugh Denney
Associate Professor
Regional and Community Affairs
University of Missouri
December 1967

Note: A preliminary paper was presented at the Missouri Conference on June 27, 1967, entitled "The Changing Scale of Communities and the Need for Continuing School Readjustment." It is suggested that this short paper be read prior to the reading of the current paper. This first paper will make the current one more understandable.

A METHOD FOR VISUALIZING A STATE-WIDE SCHOOL REORGANIZATION PLAN

The reason for considering school reorganization presumably is to provide the best possible curriculum to all elementary and secondary school students in Missouri with,

1. a minimum travel distance from their home to school consistent with
2. a maximum efficiency and economy to the tax payers.

Previous studies of the Great Plains School District Reorganization Project and two special areas in north central and northwestern Missouri lead the writer to the belief, that at this stage in history, with the development of our State highway system, it is perfectly conceivable to operate secondary schools within a maximum of 16-mile radius for bus collection. In fact, numerous schools in the state already operate at this level, and a few exceed 16 miles in a part of their territory. Furthermore, if one is careful in selecting the high school center, it is possible in almost all parts of the state to provide a potential school enrollment of 100 children per grade at 16-mile maximum centers of service.

In treating the metropolitan areas of St. Louis, Kansas City, Springfield, and St. Joseph and also in facing special problem areas such as the mining area of southeastern Missouri and some of the heavily populated cotton counties, it is suggested that a single large school district be organized to provide a uniform tax assessment base, and to spread the present unequal tax base among all the schools called upon to educate children of the commuting population.

A METHOD FOR VISUALIZING A STATE-WIDE SCHOOL REORGANIZATION PLAN

The reason for considering school reorganization presumably is to provide the best possible curriculum to all elementary and secondary school students in Missouri with,

1. a minimum travel distance from their home to school consistent with
2. a maximum efficiency and economy to the tax payers.

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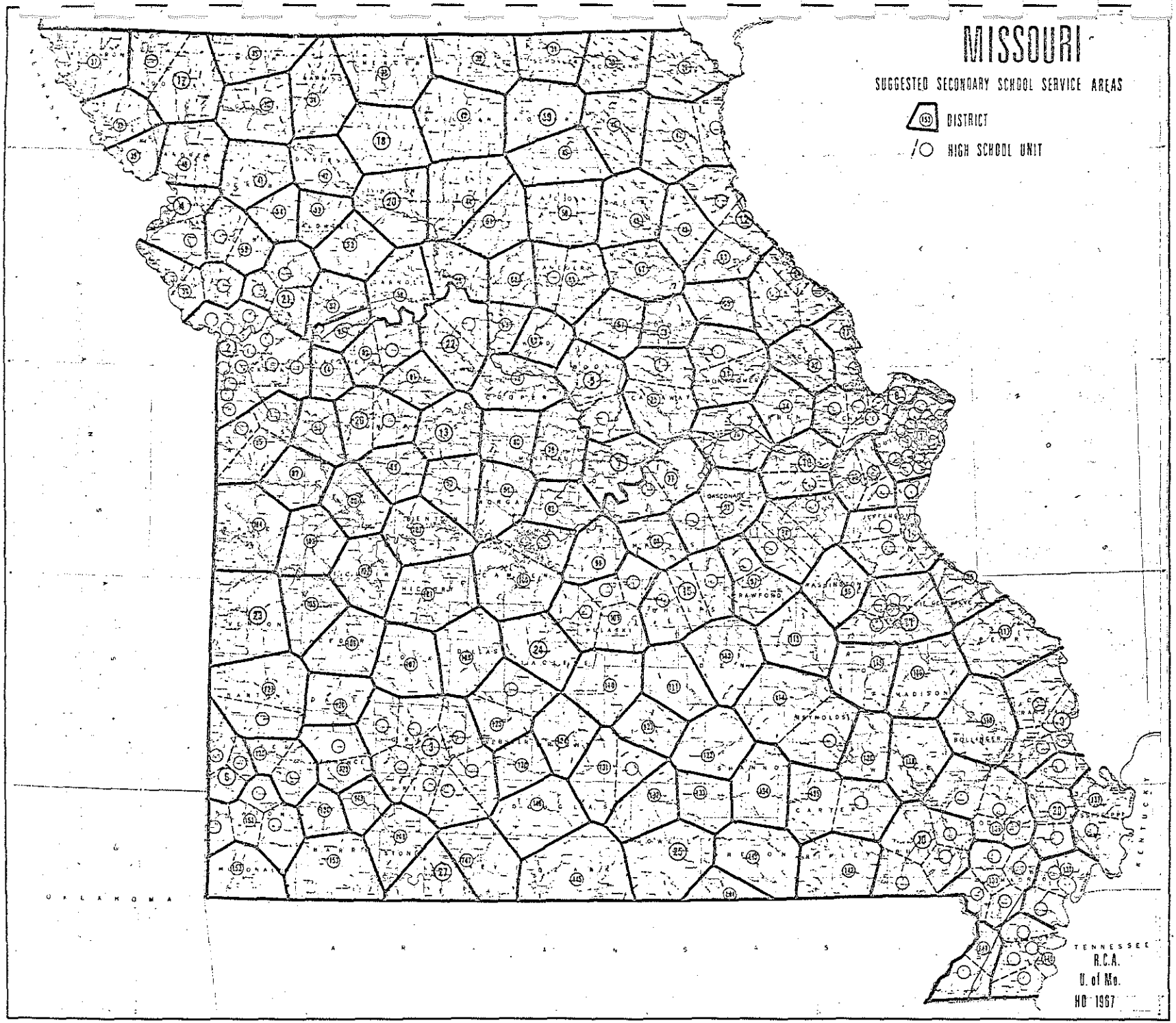

MISSOURI
SUGGESTED SECONDARY SCHOOL SERVICE AREAS
DISTRICT
HIGH SCHOOL UNIT
OKLAHOMA
ARKANSAS
KENTUCKY
TENNESSEE
R.C.A.
U. of Mo.
HD 1967

Experience in Missouri's reorganization in recent years indicates that whenever given a free hand to choose between two points the midpoint in distance is the most important basis for decision making (barring rivers or a lack of roads to serve an area).

Using the data contained in the 1967-68 school directory, (see appendices A and B) the writer has computed that the schools reported therein represent 882,778 students in grades one through twelve. Of this number, 772,694 are now attending the 268 schools suggested for continuation in the 153 districts. This represents 87.8 per cent of the students in grades one through twelve covered by the schools listed in the current directory. The 268 schools represent 54 per cent of the secondary schools listed in the current directory. Thus to achieve a 46 per cent reduction in the number of secondary school centers, would require a change in travel patterns for only 12.3 per cent of the students in the State. This change in most every instance would represent very few more miles of bus travel, but would insure the student of a greatly expanded variety of curriculum offerings in the pursuit of secondary education.

If one considers that approximately one-third of the students are in the grades 9-12 and that in most instances, at least for the present time, the elementary and junior high schools would be continued in their present buildings--then perhaps only four per cent of the students in the elementary and secondary schools would need to be transported to other schools, while effecting a 46 per cent reduction in districts and insuring the highest possible standards of secondary education for all high school students.

Looking at the problem in a smaller area in central Missouri which contained 35 secondary school districts in 1958-59 and which still has 34 districts during the current school year, we find the following data. The 13 largest districts in 1958-59 had 19,797 pupils (72.3 per cent,

including 1,603 nonresidents) and the other 22 districts, enrolled 7,574 students, (27.7%, including 528 nonresidents). By 1967-68, the 13 largest schools in Group A enrolled 28,415 students (75.5%), and the 21 remaining districts enrolled 9,210 students (24.5%). Reference to the two-color map of the CEMO area will reveal that most of the small elementary districts remaining are adjacent to the 13 largest schools and when consolidated probably will increase the percentage enrolled in the 13 largest schools to about 80 per cent.

The evolution of school districts has been a case of resistance to inevitable change. The tendency of small, weak units to join together to solve their problems rather than unite with large central schools is everywhere recognized. The purpose of the maps shown in this section is to indicate that some districts have finally begun to move towards the larger pattern--basically a 16-mile maximum service area. Although elementary schools may be maintained at other locations than the center, the tendency is to concentrate the high school program in the largest city where the minimum number of students will need to be transported to that center.

Because of the ever-increasing complexity of educational programs and the long-range probability of educational TV and other teaching aids, centralization of secondary education in the key towns rather than in some arbitarily chosen midpoint between small cities becomes imperative. Just as the farmers and small-town residents have transferred much of their retail business to the key cities indicated on this map so do they need to transfer their school functions also in order that they may perform as many of their travel functions as possible at a single place. However, it has been called to the writer's attention frequently that the small town faced with consolidation of schools almost always turns its back on its large neighbor, even though the tax

rate may be lower in the central city than in their own district. What is not so often noted is that the large central city has just as often turned its back on its rural neighbors and has been less receptive or at least less aggressive in the consolidation of small units than have the small-town schools in their desperation to survive.

The object of this presentation is to suggest that in all of man's activities coincident with the growth of the supplementary highway system and the attainment of great mobility by all people through the broader use of the automobile, we now find it possible to transfer our school and other functions to key cities with an essentially 16-mile radius of service. Because of this, we should be consciously pursuing reorganization of schools around these key centers which are on their way to becoming our home towns of the future.

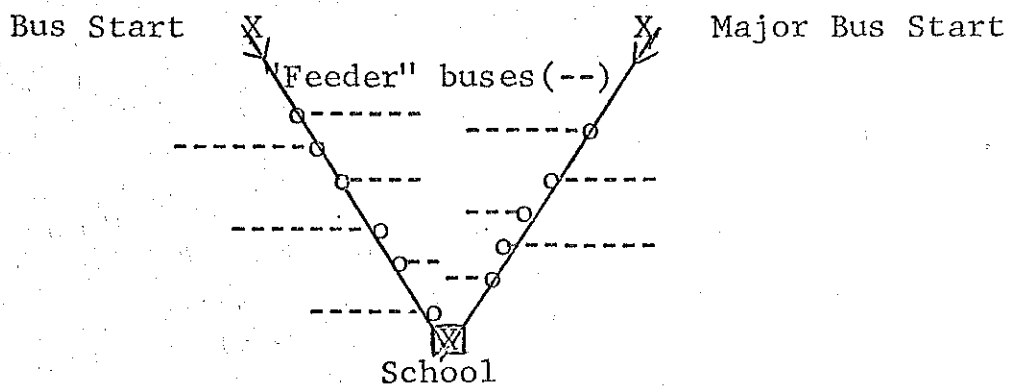
Studies made thus far indicate that at this stage in the decline of rural population, it is still possible to maintain throughout most of Missouri a high school and grade school combination with an average enrollment of 100 students per grade within a 16-mile radius of key cities. Although this number is by no means magic, it has been demonstrated that it provides the flexibility to treat students of various capabilities with greater concern than a single grade. It is also demonstrated that the cost of education in such units on an actual per student basis may be lower than many of the small schools in the surrounding area. For those interested in this point, it is suggested they review the comparative rates and the actual taxes collected locally for groups A and B in 1967-68 in Tables 4 and 5 of this report.

It should also be noted that in the larger schools there is essentially twice the variety of subjects presented at the secondary level and that in the Group A schools the teachers are more specialized tending to concentrate on a

single unit whereas in the Group B schools, at least half of the teachers must handle two or more different units.

The question may be raised as to the feasibility of transporting the students up to 16 miles. Under the recomendations presented here, larger buses would be utilized by confining their travel patterns to the supplementary highway system, and they would begin collecting students at the outer boundaries of the area and head for the center, picking up along the route from small "feeder" buses at infrequent intervals, so that the number of stops would be minimized and the speed of transportation improved.

EXAMPLE



The map presented herewith showing state and supplementary highways in the CEMO area with relationship to the suggested generalized school boundary lines indicates that no area in this section of Missouri is currently more than two and one-half miles from a supplementary highway. Some tests of the percentage of area more than one mile beyond the supplementary roads in the CEMO area indicate a variance from 25 to 30 per cent of the rural area lying between one and two and one-half miles from a state road. In the course of completing the supplementary system in the next three to five years, this percentage of area poorly served will probably be reduced to between 15 and 20 per cent of the land area. It should be noted however that the percentage of students living in these least accessible areas is much smaller than the relationship to the land area. This is

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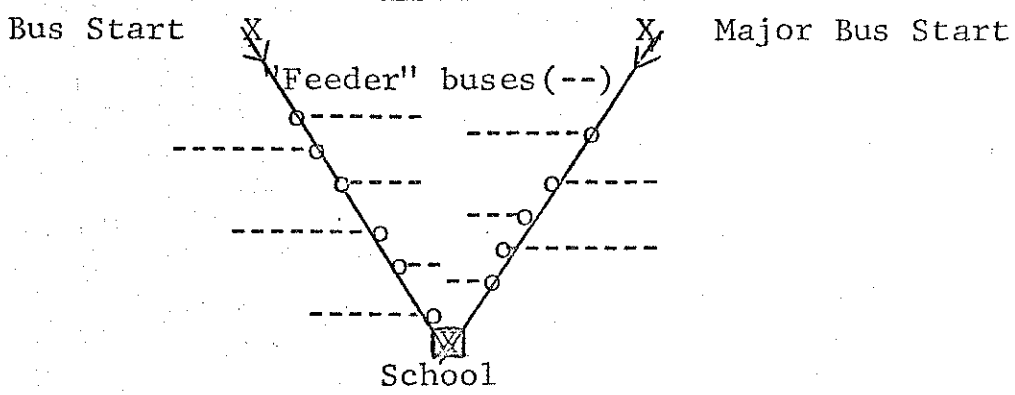

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one school district to another to make maximum utilization of physical plant facilities could best be handled under a single district administration. The present administrators of the numerous districts within the urban area, who are in the main competent men, could become even more so by specializing in certain areas of school operation. The education of all children in the area would become a concern of all the citizens rather than the limited concern of a local school district. A similar grouping of schools has been recommended in the southeastern Missouri cotton counties. Here we find a continuing need for school facilities in the central cities and we not only expect but are currently witnessing considerable industrial development in this area which promises to stablize population and provide tax support for schools to supplement the agriculture base. Because of the nature of industrial jobs and the mobility of people in the area, it is expected that such areas as the New Madrid county unit should have a single district for educational tax base since the workers in the aluminium plant will come from far more than the present New Madrid district. It is also suggested that in Reynolds County with the growth of the mineral development, there is a need for sharing the tax base between the Bunker-Ellington districts and perhaps even the consolidation of the high school unit at some central point. Obviously many persons employed in the mines are living in a district which receives little benefit in tax base for the mine activities are assessed elsewhere.

The writer would like to indicate that all lines on the map are merely suggestive points for guidance and any final determination of boundaries should be developed locally. Many studies reveal a great tendency for local people to go no farther than necessary to obtain a service, but it should be obvious that because of rivers without bridges there will be need for numerous modifications of these boundary indicators. It should also be recognized

other cultural activities which help build the community-school relationship that will insure adequate financing and support for the highest possible level of elementary and secondary education.

Failure to exercise leadership in the reorganization of districts around the central cities will be a tragedy for all concerned both in the city and in the trade area. It should be pointed out that two weak school systems do not gain very much strength by joining together, but each might find a healthy school to attach to that would provide the highest quality of education without undue hardships of travel.

Pride in affording a good education to the young people of the area should exceed the stubborness of not joining up with our big neighbors when such union has so much to offer in a modern society.

In the generalized map suggesting 153 districts for the state, rather large districts may be noted in the St. Louis, Kansas City, and Springfield areas. Although these districts exceed the 16-mile radius from the center to its fringe, it is expected that such a district in the urban area will continue to operate all existing high school units but that the tax revenues available to the schools would be allocated essentially on a student enrollment basis. At the present time, some of the suburban districts find the available tax base inadequate to offer quality education programs. Other districts with limited residents and a high industrial base have very good resources per student. Since the students in a suburban area, inadequately financed at the district level, may be the sons or daughters of an employee working in the industrial plant in the central city, it appears rational to argue that all of the educational resources of the metropolitan area should be pooled and redistributed on the basis of need. Such an arrangement would also suggest that a shift of students from

that in attempting to provide as many minimum standard enrollment districts as possible, a number of districts have been added to the normal 16-mile pattern of trade centers. Each of these decisions are somewhat arbitrary but have to the best of the writer's ability been based upon current knowledge of industrial activity or other economic forces which warrant continuation of a high school unit in anticipation of further growth of the population in the immediate future. A typical example of this type of decision is the case of Glasgow, Missouri, where in recent years vigorous industrial development activity has turned the tide of population drain, provided a good tax base for school support, and gives promise of providing a stable or increasing population and school enrollment. In other cases, spots in the central Ozarks far removed from any major city but providing minimum high school facilities have been suggested for continuance only where the distance would exceed the 16-mile maximum. No effort has been made on a state-wide basis to compute the assessed valuation per student, but the obvious point of concern is that a great reduction in overhead administrative costs can accrue by enlaring the number of students and teachers under a single administrative jurisdiction. Obviously, current physical facilities should be continued in use for the elementary and junior high programs and only the senior high school students should be concentrated in the central facilities initially. Subsequent building programs should evaluate the best locations to serve the elementary needs of a district. In some cases the continued maintenance of two high school units in a district may be advisable and the transportation of teachers between two or more schools may prove more practical than the transportation of students. The movement of teachers would permit a wider offering of courses of study and the transportation cost could be minimized in many cases. In the

presentation of the 16-mile pattern and the minimum of 100 students per grade formula, the writer suggests that one of the greatest needs as suggested by the young people themselves is to have physical facilities that provide the maximum of cultural opportunities, to equip them to cope with the urban world, in which they will spend the rest of their days. Too many of us older citizens are inclined to question the need for such frills as swimming pools in public schools, but the youths of today seek the kind of community where such facilities are provided. Since they can't be provided in every small high school, the availability of such facilities in a single central school in the district becomes an extra attraction and combined with many other features that can be made available with larger size such as educational TV and teaching machines we may expect more of the young people of rural Missouri to find that under such reorganized schools many of the cultural advantages of the central cities can be theirs. Although it is not the function of education to either urge or discourage mobility of students. It is recognized that rural America is experiencing a drain of its bright young people with serious consequences for those who remain behind. The lure of the metropolitan areas cannot be solved simply by enlarged school districts, but some more attractive towns and cultural offerings can be provided by school districts of the size suggested in the study. The three R's no longer meet the need in education. It takes large school districts to support cultural programs of quality in competition with the urban offerings. The suggested program of 153 districts is a step in this direction.

A Closer Look at Some Central Missouri School Districts 1958-59 to 1967-68.

This section is included to show the application of the methodology previously described for visualizing a State pattern of school districts with a maximum radius for transportation of 16 miles and a target minimum of 100 students per grade in the district. It may be noted that there is a slight variation in the number of districts on this map using the 100-student minimum as compared to the state-wide map. Allowance has been made for a few additional schools that are marginal in either distance or number of student per grade but which were shown on the state map on the basis of emerging industrial acitivity or a population spread from the larger cities which indicate that there will be an increase in the number of students in that area in the immediate future.

In viewing the CEMO school district maps included in this section, it is desirable to point out a number of trends. School districts such as Hermann and Montgomery City have moved in a predictable fashion to fulfill their obligation to the surrounding area. On the other hand, the larger towns, particularly Mexico, Moberly, Fulton, Columbia, and Jefferson City have been less interested in annexation or consolidation of surrounding territory with the result that either small elementary schools continue or small rural high schools faced with a declining numbers of students have taken up the slack and have moved aggressively toward the larger centers in an effort to maintain minimum student population in their districts. It is felt by the writer that this situation is an unreal one and that the major cities previously mentioned must develop a more aggressive attitude and a feeling of responsibility to the surrounding trade areas to provide the highest possible high school programs as a matter of self interest. Failure to serve as the center of education for a trade area results

in students who would normally gravitate to your city being less well prepared at the high school level than is desirable. It is rumored by many that the reason for avoidance of annexation and consolidation on the part of rural people is the high rate of taxation for central schools. Others hold that some schools prefer to charge high tuition for nonresident students rather than depend upon the additional tax base. Regardless of the merits of these arguments, data presented in Tables 1 through 6 indicate that while tax rates per $100 assessed valuation do appear to be somewhat lower in the small school units outside the central cities the actual cost to local taxpayers per student is often among the highest in the area. The average difference in 1967-68 was $.34 per hundred and when this was compared to the total local taxes per student, it represented only a difference of $27.17 per student per year between the big city schools and the rural secondary schools.

This $27 difference should be weighed against the difference in available high school credits offered which average 36.4 approved units in the small schools and 55.8 approved units in the 13 central schools. Most parents would consider the additional offerings of courses in the major schools as worth $27 per student per year. It should also be noted that the tendency to measure the tax rate between school districts can be greatly misleading. It is the amount of taxes collected per pupil which is most indicative of cost of local education. A tax rate of $3.40 for the Columbia district yielded $311.70 per resident student in 1967, whereas a tax of $4.10 in the Fulton school district yielded only $233.70 per resident student. On the other hand, a $3 rate in the Paris school district produced $320.40 per resident student, thus Paris with the lowest rate produced the greatest amount of taxes per student and Fulton with the highest rate produced the least total tax revenue per student among these three schools. The problem lies in the disparity between the number of students to be

educated in rural areas and the total tax resources. Viewed a still different way, if the total valuation of the districts covered in the CEMO map were treated as a single district and the objective was to raise the same amount of local tax funds as projected for this year, the overall average rate would be $3.31 as compared with $3.39 for the 13 largest districts and $3.05 for the 21 smallest districts. The additional $.26 increase for some of the small districts would extend the much greater variety of school curriculum to all student in the area. The $.08 reduction that would be possible in the central city programs probably would not be realized because of the desire to improve the offerings of the major schools.

The variation between Group A and Group B schools in the CEMO area in 1958-59 was much greater. At that time, the 13 largest districts had a tax rate of $3.05 while the 22 smaller districts averaged $2.27. It should be noted that while the larger districts' tax rates have gone up $.34 in the nine-year period the 22 smaller districts have increased $.78. It is apparent that this trend will continue in the next decade until the end that the small school districts will be faced with paying at a still higher tax rate to try to maintain quality schools, while the central schools with a greater industrial base will be able to hold the line better with advancing cost of education and inflationary trends. It could be argued therefore even on the basis of rate comparison that the advantage of the small districts is disappearing. On the basis of actual dollars raised for local support of schools per student, there is no direct relation to the size of districts. The six most expensive schools lie in the small school group and seven of the eight lowest-cost schools also fall in the Class B group.

The basis for comparison of further school reorganization therefore should lie in the quality of the programs

offered and the educational opportunities presented by the larger schools with additional programs on counseling and guidance and the extra-curricular activities made possible by a large size.

Relative to the increasing tax rate among the small schools, the reader should note in Table 5 that at least five small schools are already on a higher rate than the average of $3.39 for the 13 largest schools. The writer would like to call particular attention to the tendency of enlarging of school districts to fill the potential areas indicated by equidistance red lines. The most notable examples being Hermann, Montgomery City, Paris, and Centralia. It would appear that the elementary units still operating within the red-line areas should prefer the central schools over the alternative choices.

Appendix A

Missouri School Districts by counties 1958-59 and 1967-68 (From directory of public schools--State Department of Education)----------A-1 through A-24

Missouri School Districts

By counties 1958-59 and 1967-68
(* From directory of public schools--State Deparment of Education)

	1	2	3	4	5	6
	Enrollment 1958-59	Enrollment 1967-68		Enrollment 1967-68		
	1-12	1-12	10-12	9-12	8-12	7-
Adair						
R-I Novinger	515	319	63			
44 Brashear	207	---				
R-II Brashear	---	298	91			
36 Kirksville	1,983	---				
19-R-III Kirksville	---	2,612	608			
TOTAL	2,705	3,229				
Andrew						
C-I Fillmore	124	171		52		
40-R-III Savannah	1,400	1,946		599		
R-VI North Andrew	302	314		102		
TOTAL	1,826	2,431				
Atchison						
37-R-1 Tarkio	740	759		274		
37-R-II Rockport	587	631		216		
R-III Fairfax	414	363		131		
R-IV Westboro	201	67		--		
C-2 Watson	99	--		--		
TOTAL	2,041	1,820				
Audrain						
65-R-I Vandalia	1,106	1,193		365		
R-VI Community	569	618		238		
66-59 Mexico	2,824	3,191		1,154		
TOTAL	4,499	5,002				
Barry						
R-III Wheaton	326	359		130		
R-V Southwest	554	512		137		
R-VI Exeter	259	279		87		
C-2 Cassville	738	---				
153-R-IV Cassville	---	1,039		375		
Monett	1,075	---				
150-R-I Monett	---	1,375		470		
C-8 Purdy	---	---				
R-II Purdy	---	485		131		
TOTAL	2,952	4,049				
Barton						
R-II Liberal	426	557		174		
R-III Minden	123	---			145	
R-VI Golden City	314	340				
50 Lamar	954					
127-R-I Lamar		1,159		399		

	1	2	3	4	5	6
	Enrollment 1958-59	Enrollment 1967-68	Enrollment 1967-68			
	1-12	1-12	10-12	9-12	8-12	7-12
Bates						
R-I Miami (Amsterdam)	329	302		97		
R-II Ballard	---	215		70		
R-III Adrian	455	570		165		
R-IV Rich Hill	609	596				341
Butler	920	---				
4-R-V Butler	---	1,112		334		
R-VIII Hume	209	146		49		
TOTAL	2,522	2,941				
Benton						
90-R-I Cole Camp	453	535		190		
R-II Lincoln	295	340		113		
R-III Warsaw	444	---				
1-R-IV Warsaw	---	782				351
R-VI Edwards	8	---				
TOTAL	1,200	1,657				
Bollinger						
R-II Patton	564	514		160		
R-III Leopold	237	240		61		
3-R-IV Woodland	932	800		225		
R-V Zalma	488	371		133		
TOTAL	2,221	1,925				
Boone						
-R-I Southern Ashland	502	684	148			
R-II New Haven (Elem)	168	228	---			
R-IV Hallsville	343	554		141		
R-V Sturgeon	250	210				142
57-R-VI Centralia	918	1,351		379		
R-VIII Harrisburg	283	366				174
C-3 Rock Bridge (Elem)	163	---				
5-Columbia	4,626	8,365	1,816			
C-7 Midway (Elem)	---	150				
TOTAL	7,253	11,908				
Buchanan						
R-I Platte Valley	171	---				
R-II Easton	229	---				
-C-I East Buchanan (Easton) (Gower)		739		231		
R-IV DeKalb	513	581		153		
-R-V Faucett	580	727		199		
Pickett (Elem.)	290	---				
St. Joseph	11,166	14,808		4,195		

	Enrollment 1958-59 1-12	Enrollment 1967-68 1-12	10-12	Enrollment 1967-68 9-12	8-12	7-
2 Butler						
37 Poplar Bluff	3,967	5,143		1,710		
10-R-I Poplar Bluff	---					
10-R-II Broseley	725	651				
10-R-III Fisk-Rombauer	1,094	791		250		
10-C-4 Neelyville	578	1,040				51
R-V Qulin	852	619			257	
TOTAL	7,216	8,244				
3 Caldwell						
R-I Breckenridge	216	216		67		
53-R-II Hamilton	556	569		213		
R-III Kidder	145	146		43		
52-C-4 Braymer	454	445	103			
R-VII Polo	312	335			190	
TOTAL	1,683	1,711				
4 Callaway						
70-C-1 Auxvasse	299	---				
R-I North Callaway (Auxvasse)	---	978		285		
R-II South Callaway (McKane)	460	523		195		
C-3 New Bloomfield	216	---				
R-III New Bloomfield	---	384		118		
C-2 Holts Summit(elem)		275				
70-Fulton	1,615	2,179		674		
TOTAL	2,590	4,339				
5 Camden						
R-II Stoutland	462	441		132		
100-R-III Camdenton	1,084	1,607	389			
R-IV Climax Springs	168	148		50		
R-V Macks Creek	285	229		79		
TOTAL	1,999	2,425				
6 Cape Girardeau						
9-R-II Jackson	1,415	2,207	520			
R-IV Nell Holcomb		198				
R-V Delta	526	494		160		
R-VI Oak Ridge	310	284				
9-63 Cape Girardeau	2,871	5,027	1,249			
TOTAL	5,122	8,210				

	1	2	3	4	5	6
	Enrollment 1958-59	Enrollment 1967-68		Enrollment 1967-68		
	1-12	1-12	10-12	9-12	8-12	7-12
Carroll						
R-I Hale	223	237		84		
R-II Tina-Avalon	315	267		72		
R-IV Bogard	202	159		60		
R-V Bosworth	274	223		63		
58-R-VII Carrollton	1,104	1,298	326			
R-VIII Norborne	380	476		136		
TOTAL	2,498	2,660				
Carter						
135-R-I Van Buren	345	531		181		
C-I Ellsinore	370					
135-R-II East Carter(Ellsinore)		651		192		
C-3 Grandin	167					
TOTAL	882	1,182				
Cass						
C-2 Archie	255					
R-V Archie	---	423		140		
C-4 Raymore	187	---				
R-I Westline	---	514				242
R-VII Peculiar	348	---				
85-R-II Peculiar	---	1,122				475
85-R-III Pleasant Hill	767	1,106		385		
107 Drexel	258	---				
R-IV Drexel	---	329				162
1 Creighton	139	---				
R-VIII Cass (Creighton)		721				385
31 Garden City	244	---				
85-64 Harrisonville	870	1,351		415		
124 Belton	1,074	3,621	601			
R-1 Freeman	381	(See Westline)				
TOTAL	4,523	9,187				
Cedar						
106-R-I Stockton	828	910		294		
105-R-II Eldorado Springs	1,310	1,374		485		
TOTAL	2,138	2,284				
Chariton						
R-I Northwestern (Mendon)	457	380				213
59-R-II Brunswick	499	485				235
R-III Keytesville	472	388		125		
R-IV Salisbury	573	673		204		
TOTAL	2,001	1,926				

	Enrollment 1958-59 1-12	Enrollment 1967-68 1-12	10-12	Enrollment 1967-68 9-12	8-12	7
12 Christian						
R-I Chadwick	210	210		56		
3-R-II Nixa	433	684		213		
R-III Sparta	396	318		107		
R-IV Billings	213	298		87		
R-V Clever	282	334				1
3-R-VI Ozark	594	900		275		
R-VII Spokane	330	335		90		
TOTAL	2,458	3,079				
23 Clark						
40 Kahoka	691					
29-R-I Kahoka	---	1,330		426		
C-1 Wyaconda	181	159			91	
C-3 Revere	212	184		62		
TOTAL	1,084	1,673				
24 Clay						
C-I Kearney	320	---				
21-R-I Kearney	---	728		221		
27 Smithville	558	---				
R-II Smithville	---	815		231		
21-40 Excelsior Springs	1,352	2,526	521			
53 Liberty	1,753	3,244		985		
74 N. Kansas City	7,236	19,018	3,906			
R-VIII Nashua	225	---				
64 Englewood	1,665	---				
72 Linden (Gladstone)	844	---				
TOTAL	13,953	26,331				
25 Clinton						
54-R-I Cameron	962	1,184		385		
R-II Lathrop	410	528		162		
55-R-III Plattsburg	736	811				3
R-IV Gower	420	(See East Buchanan)				
TOTAL	2,528	2,523				
26 Cole						
R-1 Russellville	465	545				
7-Jefferson City	3,455	4,955	1,404			
R-II Jefferson City	---	295				
R-V Eugene	310	343			183	
TOTAL	4,230	6,138				

	Enrollment 1958-59	Enrollment 1967-68	Enrollment 1967-68			
	1-12	1-12	10-12	9-12	8-12	7-12
Cooper						
Boonville	1,105	---				
78-R-I Boonville	---	1,140		488		
R-IV Bunceton	231	187		58		
R-V Prairie Home	227	178		62		
R-VI Otterville	294	244		78		
C-4 Pilot Grove	274	304		166		
TOTAL	2,131	2,353				
Crawford						
94-R-I Bourbon	510	728				304
97-R-II Crawford(Cuba)	695	1,020		275		
7-R-III Steelville	845	810		242		
R-IV Cherryville	449	(See Viburnum)				
TOTAL	2,499	2,558				
Dade						
R-I Lockwood	436	477		172		
R-II Dadeville	172	134		52		
R-III Everton	247	183		68		
26-R-IV Greenfield	620	492			226	
TOTAL	1,475	1,286				
Dallas						
08-R-I Buffalo	1,294	1,507		479		
C-II Tunas	210	153		55		
R-V Windyville	140	---				
TOTAL	1,644	1,660				
Daviess						
R-1 Coffey	116	113				53
R-II Pattonsburg	373	297		94		
R-III Jameson	134	149		48		
42-R-V Gallatin	630	554		182		
R-VII Tri-County	408	291		87		
R-VI Winston (Jamesport)	147	166		52		
TOTAL	1,808	1,570				
DeKalb						
R-O Osborne	193	162				80
41-R-I Maysville	553	751		249		
R-II Union Star	231	272		78		
C-2 Stewartsville	259	257		93		
R-III Clarksdale	164	---				
TOTAL	1,400	1,442				

	Enrollment 1958-59 1-12	Enrollment 1967-68 1-12	Enrollment 1967-68 10-12	9-12	8-12	7-12
3 Dent						
80 Salem	1,055	---				
112-R-V Salem	---	1,405	430			
R-I Oak Hill Elem.	---	150				
R-II Green Forest	---	223				
R-III Dent-Phelps	---	260				
R-IV North Wood	---	270				
TOTAL	1,055	2,308				
4 Douglas						
146-R-I Ava	1,474	1,643		460		
TOTAL						
5 Dunklin						
139-R-1 Malden	1,415	1,435		402		
139-R-II Campbell	986	858		315		
R-III Holcomb	870	663		204		
C-2 Rives (Elem)	325	260				
C-3 Hornersville	568					
141-C-8 Senath	1248	1304	286			
C-4 Clarkton	599	437				
C-9 Cardwell Southland	487	571		185		
C-10 Arbyrd	380	---				
141-39 Kennett	2,041	2,601		708		
TOTAL	8,919	8,129				
6 Franklin						
R-VI Pacific	759	---				
R-VII Villa Ridge (Elem)	263	---				
R-III Franklin Co. (Pac.)	---	2,104	395			
16-R-XI Union	978	1,931	454			
94-R-XIII St. Clair	1,124	1,516			609	
94-C-2 Sullivan	1,161	1,675		618		
New Haven	223	368		160		
16-Washington	798	1,919		830		
TOTAL	5,306	9,513				
7 Gasconade						
3 Hermann	611					
76-R-I Hermann	---	981		290		
93-R-II Owensville	1,034	1,496		468		
R-III Bland	314	207			100	
TOTAL	1,959	2,684				

	1 Enrollment 1958-59 1-12	2 Enrollment 1967-68 1-12	3 10-12	4 9-12	5 8-12	6 7-12
8 Gentry						
R-I King City	528	461		185		
R-II Stanberry	485	554		178		
36-R-III Albany	663	636		192		
TOTAL	1,676	1,651				
9 Greene						
R-I Pleasant View(Elem)	303	375				
3-R-II Witlard	1,228	1,835		571		
3-R-III Republic	865	1,301		372		
3-R-IV Ash Grove	635	728		233		
R-V Walnut Grove	270	303		87		
3-R-VI Stafford	517	657				
R-VII Kickapoo(Elem)	519					
3-R-VIII Logan(Rogersville	---	922		240		
R-IX Hickory Hills (Elem)	352	---				
R-X Fair Grove	521	587		187		
3-R-XII Springfield	16,725	22,799		6,897		
TOTAL	21,935	29,507				
0 Grundy						
R-I Galt	241	---				
R-V (Galt Humphrey)	---	320	90			
R-II Spickard	192	154		59		
R-VII Laredo	195	186		48		
55 Trenton	1,167	---				
18-R-IX Trenton	---	1,506	409			
TOTAL	1,795	2,166				
1 Harrison						
R-I Cainsville	205	209	55			
34-R-II Southwest(Bethany)	994	1,049		335		
R-III North(Eagleville)	433	408		143		
R-IV Gilman City	278	267		82		
R-V Ridgeway	213	178		70		
R-VI Martinsville	193	91	22			
R-VII Mt. Moriah	146	---				
TOTAL	2,462	2,202				
2 Henry						
39-R-I Windsor	658	763		260		
R-VI Urich	202	(See Creighton)				
R-VIII Calhoun	235	151		66		
R-XIV Montrose	202	140		85		

t.)	Enrollment 1958-59 1-12	Enrollment 1967-68 1-12	10-12	Enrollment 1967-68 9-12	8-12	7-12
2 Henry						
88-Clinton	1,515	1,684	437			
TOTAL	3,113	2,992				
3 Hickory						
R-I Urbana	532	439		155		
R-II Wheatland	225	194		70		
R-III Weaubleau	223	231		82		
121-R-IV Herritage	145	158		58		
TOTAL	1,125	1,022				
4 Holt						
R-I Maitland	196	(See Graham)				
Mound City	416	---				
38-R-II Mound City	---	438		152		
R-III Craig	286	246		75		
C-I Mound City	69	---				
Forest City	154	---				
Oregon	335	---				
39- C-2 Oregon	---	495		179		
TOTAL	1,456	1,179				
5 Howard						
28 New Franklin	482					
R-I New Franklin	---	562				
60 Glasgow	375	379		182		
69- R-II Glasgow	---					
35 Fayette	665					
68- R-III Fayette	---	892		295		
C-4 Armstrong	137					
TOTAL	1,659	1,833				
6 Howell						
C-3 Mountain View	531	---				
133- R-III Mountain View		861		258		
132- R-IV Willow Springs	849	1,109				
25-R-VII West Plains	1,742	2,306		803		
R-XI Fairview (Elem)		334				
TOTAL	3,122	4,610				
7 Iron						
C-I Annapolis	249	---				
R-1 Annapolis	---	477				
C-2 Des Arc	209	---				
C-3 Ironton	665					
115-R-II Arcadia Valley	---	997				

(t.)	1 Enrollment 1958-59 1-12	2 Enrollment 1967-68 1-12	3 10-12	4 Enrollment 1967-68 9-12	5 8-12	6 7-12
Iron						
R-III Belleview (Elem)	---	199				
113-C-4 Iron Co.(Viburnum)	---	668		143		
TOTAL	1,123	2,341				
Jackson						
-R-I Fort Osage	1,403	3,342		826		
-R-IV Blue Springs	NA	2,537				
R-V Grain Valley	400	520		156		
-R-VI Oak Grove	513	723		180		
2-R-VII Lees Summit	2,571	4,742	999			
-C-1 Ruskin (Hickman Mills)	4,614	12,212	2,150			
-C-2 Raytown	8,477	14,519	3,305			
2-C-4 Grandview	2,095	4,822	846			
C-6 Lone Jack	256	272				133
2-30 Independence	7,916	14,450	2,863			
-33 Kansas City	58,314	70,925	13,503			
-58 Center	3,317	5,270	1,333			
TOTAL	89,876	134,334				
Jasper						
6-R-I Carl Junction	705	1,254		368		
C-110 Sarcoxie	538	---				
-R-II Sarcoxie	---	718				370
127-C-7 Jasper	353					
R-V Jasper	---	660		218		
92 Webb City	1,506					
-R-VII Webb City	---	1,808		573		
121 Joplin	7,978	---				
6-R-VIII Joplin	---	8,962	1,914			
77 Carthage	2,610	---				
128-R-IX Carthage	---	3,240	781			
C-46 Alba	204	238				102
C-91 Carterville	396	391		124		
C-119 Duenweg	390	---		141		
TOTAL	14,680	17,271				
Jefferson						
75-R-I Northwest House Springs	1,763	4,938		1,350		
R-II Grandview(Hillsboro R-II-Elem)	193	315				
14-R-III Hillsboro	837	1,924		594		
R-IV Antonio (Elem)	470	975				
14-R-V Herculaneum(Dunklin)	792	1,751		642		
14-R-VI Festus	664	2,249	593			

t.)	Enrollment 1958-59 1-12	Enrollment 1967-68 1-12	Enrollment 1967-68 10-12	9-12	8-12	7-
0 Jefferson						
R-VII(Festus)Jeff. Elem.	300	415				
R-VIII Athena(DeSoto) (Elem.)	367					
C-1 Windsor(Imperial)	584	949				
14-C-6 Fox (Elem)	1,600	5,752		1,395		
47 Crystal City	880	1,075		501		
14-73 De Soto	1,461	1,974	552			
TOTAL	10,911	23,013				
1 Johnson						
R-1 Kingsville	242	238		54		
86-R-III Holden	692	1,044		297		
R-IV Chilhowee	250	219		94		
R-V Centerview (Elem)	142	---				
26-R-VIII Knob Noster	1,112	2,159		407		
125 Warrensburg	1,325	---				
26-R-VI Warrensburg	---	1,702		532		
R-X Leeton	226	250			99	
TOTAL	3,989	5,612				
2 Knox						
R-III Noretty	208	---				
R-IV Hardland	165	---				
R-V Knox City	138	---				
12 Baring	174	---				
34 Edina	340	---				
46-R-I Knox Co. Edina	---	1,191		441		
TOTAL	1,025	1,191				
3 Laclede						
125-R-1 Conway	615	720		220		
42 Lebanon	2,372	---				
24-R-III Lebanon	---	2,558	731			
TOTAL	2,987	3,278				
4 Lafayette						
R-I Alma	117					
82-R-X Alma	---	819		534		
R-II Concordia	355	407		220		
R-III Corder	160	---				
R-IV Higginsville	886	---				
82-C-1 Higginsville	---	1,164				
R-VI Mayview	241	---		435		
84-R-VII Odessa	827	1,409		400		
R-VIII Santa Fe (Waverly)	337	---				

	Enrollment 1958-59 1-12	Enrollment 1967-68 1-12	10-12	Enrollment 1967-68 9-12	8-12	7-12
Lafayette						
R-IX Wellington-Napoleon	469	425		130		
83-R-V Lexington	1,192	1,331		441		
TOTAL	4,584	5,555				
Lawrence						
129-R-II Miller	652	687				345
C-5 Mt. Vernon	786	---		---		
129-R-V Mt. Vernon	---	903		331		
R-VI Pierce City	551	583		252		
R-VII Verona	266	330		130		
149-R-VIII Aurora	---	1,391		440		
Aurora	1,163	---		---		
R-IX Marionville	545	624		195		
TOTAL	3,963	4,518				
Lewis						
R-I LaBelle	382					
R-II Lemo(Lewiston)	316					
R-IV Ewing	348					
R-VI La Grange	486					
C-1 Lewis Co.(Monticello)	---	1,689		459		
R-III Williamstown	122	137		45		
7-R-V Canton	542	613				267
TOTAL	2,196	2,439				
Lincoln						
R-I Silex	258	365		155		
73-R-II Elsberry	521	714		214		
2-R-III Troy	1,077	1,662		527		
73-R-IV Winfield	512	769		229		
TOTAL	2,368	3,510				
Linn						
R-I Linn Co. Browning	445	433		143		
R-II Bucklin	360	320		93		
Brookfield	1,118					
4-R-III Brookfield	---	1,466		476		
R-IV Meadville	361	413		144		
51-R-V Marceline	751	NA		---		
TOTAL	3,035	2,632				

	1 Enrollment 1958-59 1-12	2 Enrollment 1967-68 1-12	3 10-12	Enrollment 1967-68 9-12	8-12	7
9 Livingston						
R-I Mooresville	336	---				
R-I Southwest	---	279		76		
20-R-II Chillicothe	2,054	2,408		730		
R-IV Wheeling	160	94				
TOTAL	2,550	2,781				
0 McDonald						
152 R-I Anderson	738	1,826		520		
R-II Goodman	387					
R-III Southwest City	280					
R-IV Noel	401					
R-VI Rocky Comfort	382					
R-VII Pineville	422					
TOTAL	2,610	1,826				
61 Macon						
86 Macon	923	---				
50-R-I Macon	---	1,267		441		
C-7 La Plata	463	---				
45-R-II La Plata	---	489		169		
C-3 Atlanta	276	287				
C-4 Bevier	345	298		107		
C-5 New Cambria	232	191	48			
C-6 Ethel	116	100				
C-8 Callao	165	166		44		
C-1 Elmer	167	---				
TOTAL	2,687	2,798				
62 Madison						
20 Fredericktown	1,133	---				
116-R-I Fredericktown	---	1,662		536		
R-IV Mill Creek(Elem)	250	---				
R-VI Marguand-Zion	307	269				
C-2 Mine-La-Motte	NA	---				
R-III East Madison(ELEM)	262	---				
TOTAL	1,952	1,931				
63 Maries						
98- R-1 Vienna	417	683		251		
93- R-II Belle	522	757		211		
TOTAL	939	1,440				

	Enrollment 1958-59 1-12	Enrollment 1967-68 1-12	10-12	Enrollment 1967-68 9-12	8-12	7-12
Marion						
35 Palmyra	612	---				
12-R-I Palmyra	---	1188				(585)
R-II Marion(Philadelphia	293	295			106	
17-60 Hannibal	3541	4091	(970)			
TOTAL	4446	5574				
Mercer						
R-III North Mercer	208	276		75		
R-IV Ravanna	107	129		42		
33-R-V Princeton	NA	687		239		
TOTAL	315	1092				
Miller						
92-R-I Eldon	1279	1533		(526)		
C-I School of the Osage	466	---				
100-R-II School of the Osage	---	643				333
R-III Tuscumbia	NA	261				100
R-IV St. Elizabeth	335	395		122		
74 Iberia	293	---				
9 -R-V Iberia	---	663		199		
TOTAL	2373	3495				
Mississippi						
C-7 Charleston	1841	---				
137-R-I Charleston	---	2793		(771)		
C-5 East Prairie	1350	---				
13/-R-II East Prairie	---	1752		(486)		
R-VII Dorena (Elem.	349	---				
C-3 Anniston	635	---				
TOTAL	4175	4545				
Moniteau						
79-R-I California	809	1002		(370)		
80-R-VI Tipton	595	723		320		
C-I Jamestown	226	188			62	
TOTAL	1630	1913				
Monroe						
61 Monroe City	599	---		(400)		
48-R-I Monroe City	---	1075				
C-4 Paris	553	---		271		
62-R-II Paris	---	742				115
C-3 Madison	248	234				
TOTAL	1400	2051				

	1 Enrollment 1958-59 1-12	2 Enrollment 1967-68 1-12	3 Enrollment 1967-68 10-12	9-12	8-12	7-12
70 Montgomery						
71-R-1 Wellsville-Middle-Town	641	658		224		
71-R-II Montgomery Co.	1,169	1,343		415		
TOTAL	1,810	2,001				
71 Morgan						
R-I Stover	529	501		181		
91-R-II Versailles	1,002	1,003		348		
TOTAL	1,531	1,504				
72 New Madrid						
138-R-I Portageville	1,713	1,296				629
R-IIRisco	840	572				2
R-III Parma	711	617	99			
138-R-IV Lilbourn	1,488	1,259		336		
R-V Matthews	1,153	706		199		
138-R-VI New Madrid	1,452	1,095		304		
C-12 Morehouse	478	415		118		
37 Gideon	1,154	763				360
TOTAL	8,989	6,723				
73 Newton						
R-I Stella	341	---				
R-II Midway(Stork City)	328	---				
R-III Granby	696	---				
151-R-IV Diamond	359	650		177		
57 Neosho	2,269	---				
151-R-V Neosho	---	3,433		1,085		
151-R-VI East Newton (Starkley)	---	1,317		437		
C-7 Seneca	NA	---				
151-R-VII Seneca	---	1,221		415		
C-1 Fairview	NA	---				
TOTAL	3,993	6,621				
74 Nodaway						
70 Burlington Jct.	NA	---				
17-R-I West Nodaway	---	637		233		
97 Maryville	1,014	---				
17-R-II Maryville	---	1,404		571		
R-III Graham	244	---				
167 South Nodaway(Barnard)	211	---				
R-IV South Nodaway(Barnard)	---	268				1
R-V NE Nodaway(Ravenwood)	401	377		116		
5 Hopkins	307	---				
R-VI Hopkins	---	430		139		

	Enrollment 1958-59 1-12	Enrollment 1967-68 1-12	10-12	9-12	8-12	7-12
4 (cont) Nodaway						
R-VII Nodaway-Holt(Graham-		531		162		
C-123 Jefferson(Con-	134					
C-123 Jefferson (ception) (Conception JCt.)	---	161		102		
C-38 Elmo	154	---				
102 Quitman	147	---				
C-136 Skidmore	166	---				
35 Clearmont	155	---				
50 Pickering	89	---j				
TOTAL	3,022	3,808				
5 Oregon						
R-I Couch (Myrtle)	457	370		141		
144-R-II Thayer	705	656	149			
R-III Kosh Konong	302	280		86		
C-2 Alton	465	---				
143-R-IV Alton	---	790		268		
C-9 Rover(Thomasville)	277	---				
TOTAL	2,206	2,096				
6 Osage						
R-I Chamois	273	310				180
77-R-II Linn	500	498		211		
77-R-III Westphalia	496	727		466		
TOTAL	1,269	1,535				
7 Ozark						
R-III Dora	347	346		111		
R-IV Bakersfield	406	268				116
145-R-V Gainesville	734	641		252		
TOTAL	1,487	1,255				
8 Pemiscot						
R-I Pemiscot Co.IHayti	957	---				
140-R-I North Pemiscot (Wordell)	---	1,166	276			
140-R-II Hayti	1,904	1,945		545		
R-III Pemiscot Co. (Caruthersville)	756	400				
R-II Cooter (Elem)	571	334				159
140-R-V So.Pemiscot(Steele	1,303	1,373	280			
C-6 Deering	743	---				
C-7 Deering	---	787	196			
140-18 Caruthersville	2,171	2,046		570		
C-1 Holland	625	---				
R-VI Wardell	1,500	---				
C-7 Braggadocia	525	---				

.)	Enrollment 1958-59 1-12	Enrollment 1967-68 1-12	10-12	9-12	8-12	7-1
78 Pemiscot						
C-9 Bragg City	391	---				
TOTAL	11,446	8,051				
79 Perry						
117-32 Perryville	842	1,485	601			
TOTAL	842	1,485				
80 Pettis						
R-II Hughesville	267	---				
R-III Houstonia	145	---				
R-IV La Monte	293	369		112		
R-V Hughesville	---	496		199		
R-VI Smithon	511	479				22
R-VIII Green Ridge	327	377				3
13-200 Sedalia	4,015	4,657		1,086		
TOTAL	5,558	6,378				
1 Phelps						
C-1 St. James	672	---				
15-R-I St. James	---	1,229		352		
C-3 Newburg	494	---				
15-R-II Newburg	---	655				9
R-III Edgar Springs(Elem)	---	225				
15-31 Rolla	2,142	3,198	733			
TOTAL	3,308	5,307				
2 Pike						
64-R-I Bowling Green	775	1,502		493		
Louisiana	944	---				
64-R-II Louisiana	---	1,313		367		
64-R-III Pike(Clarksville)	650	687		202		
R-VIII Carryville(Elem)	130	---				
R-XIII Frankford	282	---				
TOTAL	2,781	3,502				
3 Platte						
R-I North Platte(Dearborn)	579	660		202		
56-R-II West Platte(Weston)	649	760		213		
56-R-III Platte City	486	1,031		290		
R-IV East Platte(Elem)	245	---				
R-V Parkville	2,400	---				
2-R-V Park Hill	---	4,625	900			
TOTAL	4,359	7,076				

	1 Enrollment 1958-59 1-12	2 Enrollment 1967-68 1-12	3 Enrollment 1967-68 10-12	4 Enrollment 1967-68 9-12	8-12	7-12
84 Polk						
107-R-I Bolivar	1,083	1,166		380		
R-II Fairplay	220	242		85		
R-III Halfway	NA	302		106		
R-IV Humansville	329	343		121		
R-V Marion C. Early (Morrisville)	458	539		178		
R-VI Pleasant Hope	412	451			155	
TOTAL	2,502	3,043				
85 Pulaski						
9-R-I Dixon	769	1,049		281		
9-R-II Crocker	521	665			223	
109-R-IV Richland	725	688		283		
09-R-VI Waynesville	2,501	5,050	702			
TOTAL	4,516	7,452				
8 Putnam						
31 Livonia	141	---				
38 Unionville	638	---				
2-R-I Unionville	---	977			440	
TOTAL	779	977				
8 Ralls						
R-I Ilasco	301	---				
63-R-II Ralls Co.(Center)	1,068	1,018		316		
TOTAL	1,369	1,018				
88 Randolph						
1-R-I Westran (Huntsville)	708	706		216		
R-IV Northeast(Cario)	342	299		105		
R-V Renick	190	167	52			
R-VIII Higbee	244	234	49			
61-Moberly	2,256	2,517	421(10 and 11 only)			
TOTAL	3,740	3,923				
89 Ray						
R-I Stet	166	141		51		
R-IV Lawson	430	---				
C-7 Orrick	426					
R-XI Orrick	---	476		158		
Richmond	1,246	---				
57-R-XIII Richmond	---	1,801				794
C-8 Hardin	257	---				
C-2 Hardin-Central(Hardin)	---	293				126
C-3 Henrietta (Elem)	100	---				
TOTAL	2,625	2,711				

	1 Enrollment 1958-59 1-12	2 Enrollment 1967-68 1-12	3 1967-68 10-12	4 Enrollment 1967-68 9-12	5 1967-68 8-12	7-12
90 Reynolds						
R-I Centerville	366	185		61		
114-R-II So.Reynolds(Ellington)	NA	624		186		
114-R-III Bunker	405	509				20
R-IV Lesterville	320	315		105		
TOTAL	1,091	1,633				
91 Ripley						
142-R-I Doniphan	1,308	1,385	360			
R-II Naylor	518	481				22
TOTAL	1,826	1,866				
92 St. Charles						
R-I Augusta	161	---				
R-II Cent.(O'Fallon)(Elem)	425	---				
8-R-III St.CharlesCo. (Francis Howell)	1,123	3,229	536			
8-R-IV Wentzville	739	1,978		544		
8-R-V Route 3 (St.Charles)	---	1,353				
8-Ft. Zumvalt (O'Fallon)	---	3,569	679			
8-St. Charles	2,774	5,550		1,768		
TOTAL	5,222	15,679				
93 St. Clair						
103-R-II Appleton City	572	499		207		
C-3 Collins	180	130				6
C-4 Lowry City	224	196		72		
102-Osceola	530	475		186		
TOTAL	1,506	1,300				
94 St. Francois						
11-R-I North Co.-(Desloge)	---	2,077	449			
29 Desloge	876	---				
61 Flat River	867	---				
11-R-III Flat River	---	2,143	443			
63 Leadwood	485	---				
11-R-IV Leadwood	---	912		253		
11-R-V Bismarck	572	603		189		
R-VI Doe Run	390	---				
11-R-VII Farmington	1,306	2,360	579			
C-4 Frankclay	180	---				
7 Elvins	478	---				
12 Bonne Terre	864	---				
27 Esther	746	---				
TOTAL	6,764	8,095				

	1 Enrollment 1958-59 1-12	2 Enrollment 1967-68 1-12	3 Enrollment 1967-68 10-12	4 Enrollment 1967-68 9-12	5 Enrollment 1967-68 8-12	7-12
9 Ste.Genevieve						
R-I St. Marys	164	---				
95-R-II Ste.Genevieve	593	1,313	356			
TOTAL	757	1,313				
96 St. Louis County						
R-I Hazelwood	3,159	---				
1-Hazelwood	---	17,115	2,880			
1-R-II Ferguson	7,074	16,372	3,761			
1-R-III Pattonville	2,819	9,390		2,241		
75-R-VI Eureka(Rockwood)	3,252	6,483		1,902		
1-R-VII Kirkwood	7,159	8,424	2,321			
1-R-VIII Lindbergh	3,511	9,767	2,112			
1-R-IX Mehlville	2,816	8,029		2,354		
1-C-2 Parkway(Creve Coeur)	1,898	12,122	2,378			
1-101 Afton	3,020	3,863	1,082			
1-102 Bayless	1,440	2,440	608			
1-Berkeley	2,918	4,813	966			
1-Brentwood	1,626	1,633				798
1-Clayton	1,857	2,268		782		
1-Hancock Place	1,781	2,125		629		
1-Jennings	1,478	2,882	855			
1-Kinloch	1,392	1,294		337		
1-Ladue	3,474	5,915	1,493			
1-Maplewood-Richmond Heights	2,513	2,782		923		
1-Normandy	5,205	7,677		2,540		
Maryland Heights(Disc)	673	---				
1-Ritenour	9,270	12,634	2,939			
1-Riverview Gardens	5,102	9,398	1,858			
1-University City	7,703	7,398	1,820			
1-Valley Park	758	991		259		
1-Wellston	1,326	1,844		354		
1-Webster Groves	6,626	7,405	1,907			
Special Dist(Handicapped)	127	---				
1-Special District	---	3,046		441		
West Walnut Manor	1,206	---				
Scudder	233	---				
Jefferson Barracks	277	---				
TOTAL	91,693	168,110				

	Enrollment 1958-59 1-12	Enrollment 1967-68 1-12	Enrollment 1967-68 10-12	9-12	8-12	7-12
97 Saline						
R-I Miami (Elem)	154	152				
R-V Malta Bend	266	268				
R-VI Blackburn	135	---				
81- R-VII Sweet Springs	465	512		167		
R-XVI Nelson	123	---				
22- Slater	640	610		265		
22- Marshall	1,762	2,165		805		
TOTAL	3,545	3,707				
98 Schuyler						
20 Lancaster	310	---				
31- R-1 Schuyler Co(Lancaster)	--	989		323		
31 Downing	204	---				
42 Queen City	233	---				
57 Green Top	154	---				
TOTAL	901	989				
99 Scotland						
30-R-I Memphis	723	918		330		
R-III Gorin	166	145		46		
C-1 Granger	95	---				
TOTAL	984	1,063				
100 Scott						
9- R-I Illmo-Scott City	722	958				
9- R-II Chaffee	734	697		262		
R-III Oran	545	477		190		
28- R-IV Benton	836	727		282		
R-V Morley	654	658		187		
28- R-VI Sikeston	3,256	3,937	816			
TOTAL	6,747	7,454				
101 Shannon						
R-I Eminence	524	413				
R-II Birch Tree	391	501		111		
134- R-III Winona	527	540		152		
TOTAL	1,442	1,454				
102 Shelby						
R-I Bethel	164	---				
R-II Leonard	139	---				
Clarence	419	---				
Shelbyville	266	---				
C-1 Shelbyville	---	521				

	Enrollment 1958-59 1-12	Enrollment 1967-68 1-12	10-12	Enrollment 1967-68 9-12	8-12	7-12
12 Shelby						
Shelbina	600	---				
9-R-IV Shelbina	---	1,268		382		
TOTAL	1,588	1,789				
13 Stoddard						
R-I Gray Ridge	1,000	---				
R-I Richland(Essex)	---	998		301		
R-II Bell City	800	571				270
R-IV Advance	576	553				256
1 5-R-VIII Puxico	754	647		208		
136-R-XI Dexter	1,863	1,924		590		
139-R-XIII Bernie	1,020	865		244		
1 5-R-XIV Bloomfield	941	730				382
R-X Essex	482	---				
TOTAL	7,436	6,288				
04 Stone						
R-I Hurley	246	220				126
1 3-R-II Galena	506	475		155		
R-III Crane	430	443			181	
R-IV Reeds Spring	424	495		161		
R-V Blue Eye	279	300			124	
TOTAL	1,885	1,933				
05 Sullivan						
R-I Green City	487	404		133		
R-II Milan	797	---				
43-C-2 Milan	---	697				353
R-III Newtown-Harris	NA	202				106
R-IV Humphreys	171	(See Gatt)				
TOTAL	1,455	1,303				
06 Taney						
R-I Bradleyville	232	216		98		
147-R-III Forsyth	389	376		191		
7-R-IV Branson	792	899		310		
R-V Hollister	325	396		130		
TOTAL	1,738	1,887				
07 Texas						
C-I Houston	877	---				
3-R-I Houston	---	1,212		468		
C-2 Summersville	435	---				
2-R-II Summersville	---	631		212		

nt.)	1 Enrollment 1958-59 1-12	2 Enrollment 1967-68 1-12	3 10-12	4 Enrollment 1967-68 9-12	8-12	7-12
07 Texas						
131-R-Iv Cabool	860	1,053		315		
C-5 Plato	271	---				
111-R-VIII Licking	708	670		250		
110-R-V Plato	---	520		184		
TOTAL	3,151	4,086				
08 Vernon						
R-I Schell City	NA	159		55		
R-II Metz	225	156		57		
R-III Richards	115	---				
R-IV Walker	255	225				
23-R-V Nevada	1,829	2,182		672		
R-VII Bronaugh	305	326		107		
R-VIII Sheldon	225	190		67		
TOTAL	2,954	3,238				
09 Warren						
R-I Marthasville(Elem)	68	---				
R-II Wright City	371	623		174		
74-R-III Warrenton	845	1,065		310		
TOTAL	1,284	1,688				
10 Washington						
96-R-III Potosi	1,987	2,265	550			
R-V Irondale	157	---				
R-VI Valley(Caledonia)	585	580		245		
TOTAL	2,729	2,845				
11 Wayne						
C-I Patterson	195	---				
C-3 Greenville	282	---				
119-R-II Greenville	---	773		267		
120-C-4 Piedmont	584	---				
R-I Clearwater(Piedmont)	---	992		326		
C-5 Williamsville	195	---				
TOTAL	1,256	1,765				
12 Webster						
C-5 Marshfield	759	---				
125-R-I Marshfield	---	1,543		489		
C-6 Seymour	602					
130-R-II Seymour	---	700		225		
C-3 Fordland	237	---				
R-III Fordland	---	346				

	Enrollment 1958-59 1-12	Enrollment 1967-68 1-12	10-12	Enrollment 1967-68 9-12	8-12	7-12
12 Webster						
R-Iv Rogersville	418	---				
C-I Niangua	223	---				
R-V Niangua	---	292		90		
C-2 Elkland	165	---				
TOTAL	2,404	2,881				
13 Worth						
35-R-I Grant City	643	557		187		
R-II Sheridan	212	147				70
TOTAL	855	704				
14 Wright						
R-I Norwood	320	306		105		
124-R-II Hartville	542	856		273		
131-R-III Mountain Grove	1,330	1,533		457		
R-IV Mansfield	610	605		180		
TOTAL	2,802	3,300				
15 St. Louis City						
1-St. Louis City	97,012	106,709		24,224		
TOTAL	97,012	106,709				
GRAND TOTAL	649,876	882,778				

Appendix B

Tables 1-6

TABLE 1

Area Totals

	1 Assessed Valuation	2 Tax Rate	3 Total Taxes	4 No.Pupils non-res.	5 No.Pupils Total	6 Local Taxes per pupil (res.only)	7
Group A (1958-59)							
13 Districts 72.3% of students	117,110,438	3.05	3,191,393	1,603	19,797	175.41	
(B) 22 Districts 27.7% of students	47,595,039	2.27	1,082,963	528	7,574	153.70	
	164,705,477	2.60	4,274,356	2,131	27,371	169.35	
Group A (1967-68)							
13 Districts 75.5% of students	218,766,281	3.39	7,421,035	903	28,415	269.74	
(B) 21 Districts 24.5% of students	71,531,734	3.05	2,184,790	203	9,210	242.57	
	290,298,015	3.31	9,605,825	1,106	37,625	263.04	

TABLE 2

CEMO Schools, Group A, 1958-59

	1 Assessed Valuation	2 Tax Rate	3 Total Taxes	4 No. Pupils non-res.	5 No. Pupils Total	6 Local Taxes Per Pupil (Res. only
Audrain 59 Mexico	15,691,658	2.82	442,505	--	2,824	156.69
R-1 Vandalia	8,000,000	3.33	266,400	4	1,171	228.28
Boone R-VI Centralia	4,565,394	2.90	132,396	118	918	165.50
* Columbia	32,977,740	2.90	956,354	254	5,173	194.42
Callaway 58 Fulton	6,976,950	2.50	174,424	273	1,615	129.97
Cooper * Boonville	7,178,358	2.12	152,181	199	1,222	148.76
Howard 35 Fayette	2,544,483	2.55	64,884	177	665	132.96
Moniteau R-1 California	5,160,280	2.00	103,206	78	809	141.18
R-VI Tipton	4,000,000	2.60	104,000	35	619	178.08
Monroe 61 Monroe City	2,063,074	2.10	43,325	234	599	118.70
C-4 Paris	3,878,049	2.00	77,561	125	553	181.22
Montgomery R-11 Mont.City	9,620,132	2.35	226,073	4	1,169	194.05
Randolph * Moberly	14,454,320	3.10	448,084	102	2,460	190.02
TOTAL	117,110,438	3.05	3,191,393	1,603	19,797	175.21

TABLE 3

CEMO Schools, Group B, 1958-59

	1 Assessed Valuation	2 Tax Rate	3 Total Taxes	4 No. Pupils non-res.	5 No. Pupils Total	6 Local Taxes Per Pupil (Res. only)
Audrain R-VI Laddonia	5,306,598	1.90	100,825	5	569	178.76
Boone R-I Ashland (South.)	2,424,870	2.75	66,683	4	502	133.90
R-IV Hallsville	1,581,740	2.58	40,809	-	343	118.98
R-V Sturgeon	1,955,000	2.35	45,943	-	250	183.77
R-VIII Harrisburg	1,265,390	2.50	31,635	8	283	115.04
Callaway C-1 Auxvasse	1,422,737	2.75	39,123	11	299	135.84
R-II McKane	2,011,146	2.85	57,318	-	460	124.60
C-3 New Bloomfield	1,075,105	3.10	33,328	21	216	170.91
Cooper R-IV Bunceton	2,323,390	1.90	44,144	3	231	193.61
R-V Prairie Home	2,065,250	2.00	41,305	-	227	181.96
R-VI Otterville	1,759,040	2.10	36,940	-	294	125.65
C-4 Pilot Grove	2,500,000	2.20	55,000	21	274	217.39
Howard 28 New Franklin	1,176,154	2.05	24,111	140	501	66.79
60 Glasgow	1,250,000	1.75	21,875	173	389	101.27
C-4 Armstrong	670,760	3.00	20,123	56	137	248.43
Moniteau C-1 Jamestown	1,727,400	2.00	34,548	-	226	152.87
Monroe C-3 Madison	1,940,430	2.38	46,182	12	248	195.69
Montgomery R-1 Wellsville	4,939,219	2.70	133,359	1	641	208.37
Randolph R-1 Westran	4,717,445	2.25	106,143	2	708	150.34
R-IV Northeast (Huntsville)	2,505,360	2.25	56,371	2	342	165.80
R-V Renick (Cario)	1,029,000	2.65	27,269	34	190	174.80
R-VIII Hiobee	949,005	2.10	19,929	35	244	95.35
TOTAL	47,595,039	2.27	1082.963	528	7,574	153.70

TABLE 4

CEMO Schools, Group A, 1967-68

	Assessed Valuation	Tax Rate	Total Taxes	No. Pupils non-res.	No. Pupils Total	Local Taxes Per Pupil (res. only)	No. Teachers 1967-68	App. Uni H.S. Cr offered 196
Audrain 59 Mexico	21,207,864	3.83	812,261	252	3,470	252.41	167	83
R-1 Vandalia	9,021,589	3.25	293,202	-	1,266	231.60	61	53
Boone R-VI Centralia	12,068,003	2.82	340,318	4	1,481	230.41	63	50
* Columbia	83,186,540	3.40	2,828,342	166	9,240	311.70	436	94
Callaway 58 Fulton	13,332,805	4.10	546,645	33	2,372	233.70	117	61
Cooper R-1 Boonville	13,418,091	3.00	402,543	60	1,587	263.62	75	56
Howard R-III Fayette	5,655,300	2.50	141,382	69	962	146.97	50	46
Moniteau R-1 California	6,823,433	2.95	201,291	73	1,078	200.29	47	45
R-VI Tipton	5,000,000	3.00	150,000	63	783	208.33	38	42
Monroe R-I Monroe City	9,414,818	3.20	301,274	2	1,154	261.52	60	47
R-II Paris	7,633,581	3.00	229,007	88	802	320.74	41	47
Montgomery R-II Mont. City	12,232,607	3.30	403,676	-	1,467	275.17	55	54
Randolph * Moberly	19,771,650	3.90	771,094	93	2,753	289.88	125	44
TOTAL	218,766,281	3.39	7,421,035	903	28,415	269.74	1,333	725
							Ave. 102.4	Ave. 55

TABLE 5

CEMO Schools, Group B, 1967-68

	1 Assessed Valuation	2 Tax Rate	3 Total Local Taxes	4 No. Pupils non-res.	5 No. Pupils Total	6 Local Taxes per pupil (res.only)	No. Teachers 1967-68	App H.S. offe 196
Audrain R-VI Laddonia (Community)	6,061,557	3.41	206,699	6	618	337.74	30	
Boone R-I Ashland (Southern)	3,988,956	3.05	121,663	4	738	165.75	26	
R-IV Hallsville	3,297,508	3.44	113,434	1	618	184.22	32	
R-V Sturgeon	2,838,000	3.15	89,397	-	239	374.05	19	
R-VIII Harrisburg	2,131,620	3.47	73,967	3	393	189.66	18	
Callaway R-1 Auxvasse	7,686,298	3.40	261,334	-	1,060	246.54	51	
R-II McKane	2,522,900	3.35	84,517	48	523	177.93	24	
R-III New Bloomfield	1,688,575	3.35	56,567	17	409	144.30	19	
Cooper R-IV Bunceton	2,536,240	2.65	67,210	-	209	321.58	13	
R-V Prairie Home	2,268,090	2.60	58,970	-	193	305.54	24	
R-VI Otterville	2,083,485	3.08	64,171	-	264	243.07	17	
C-4 Pilot Grove	3,129,750	2.85	89,197	35	304	331.58	20	
Howard R-I New Franklin	3,974,540	2.75	109,300	32	597	193.45	31	
R-II Glasgow	4,675,000	2.30	107,525	10	419	262.90	26	
C-4 Armstrong (abandoned)	-----	--	----	--	--			
Moniteau C-1 Jamestown	1,883,036	2.75	51,783	---	188	275.44	13	
Monroe C-3 Madison	2,437,480	3.25	79,218	11	252	328.70	15	
Montgomery R-1 Wellsville	5,868,964	2.70	158,462	---	692	228.99	35	
Randolph R-1 Westran (Huntsdale)	7,297,840	3.00	218,935	---	750	291.91	33	
R-IV Northeast (Cairo)	2,880,580	3.40	97,940	1	299	328.66	19	
R-V Renick	1,112,320	3.65	40,600	35	194	255.34	16	
R-VIII Higbee	1,168,995	2.90	33,901	---	251	135.06	16	
TOTAL	71,531,734	3.05	2,184,790	203	9,210	242.57	497	8

TABLE 6

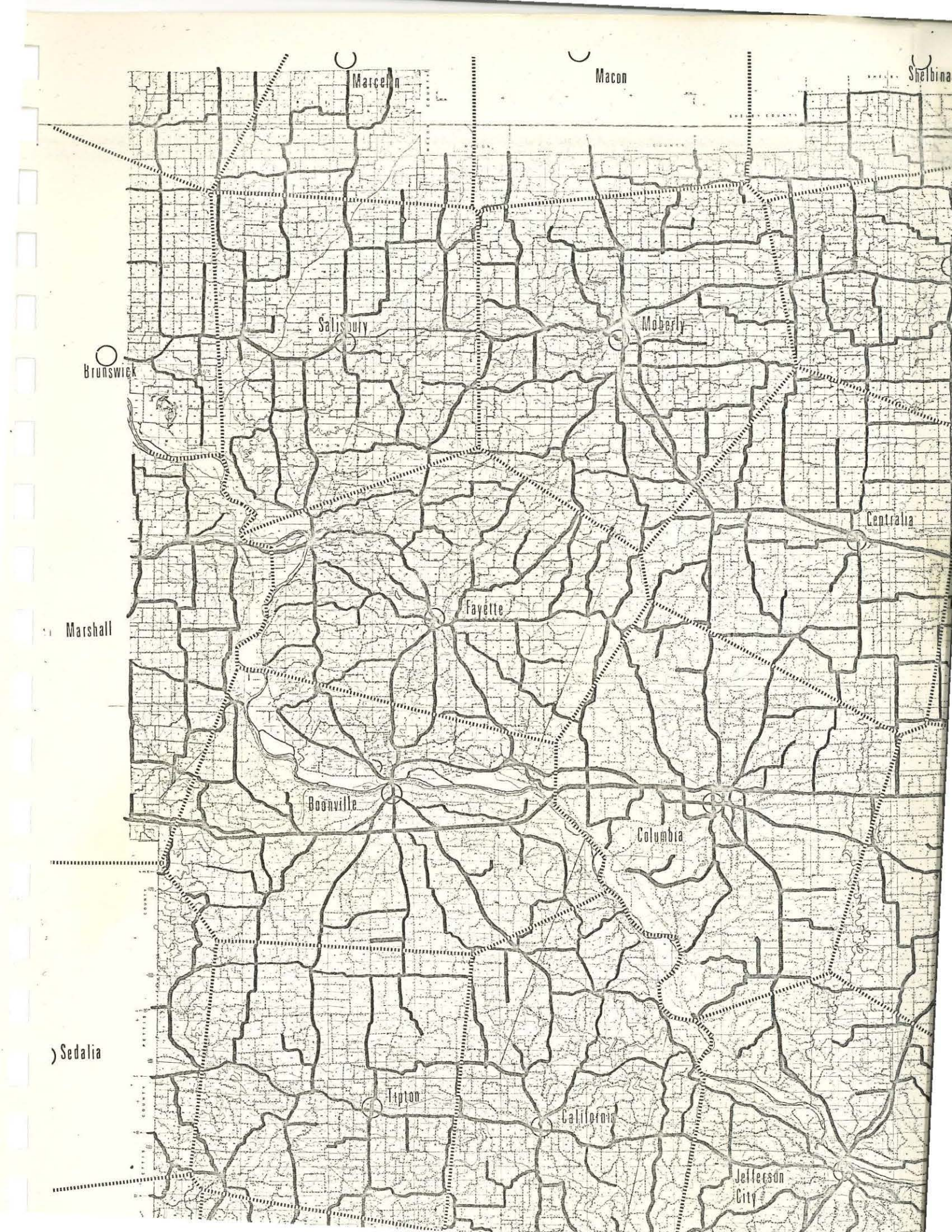
CEMO Schools--Local Taxes Collected per President Student

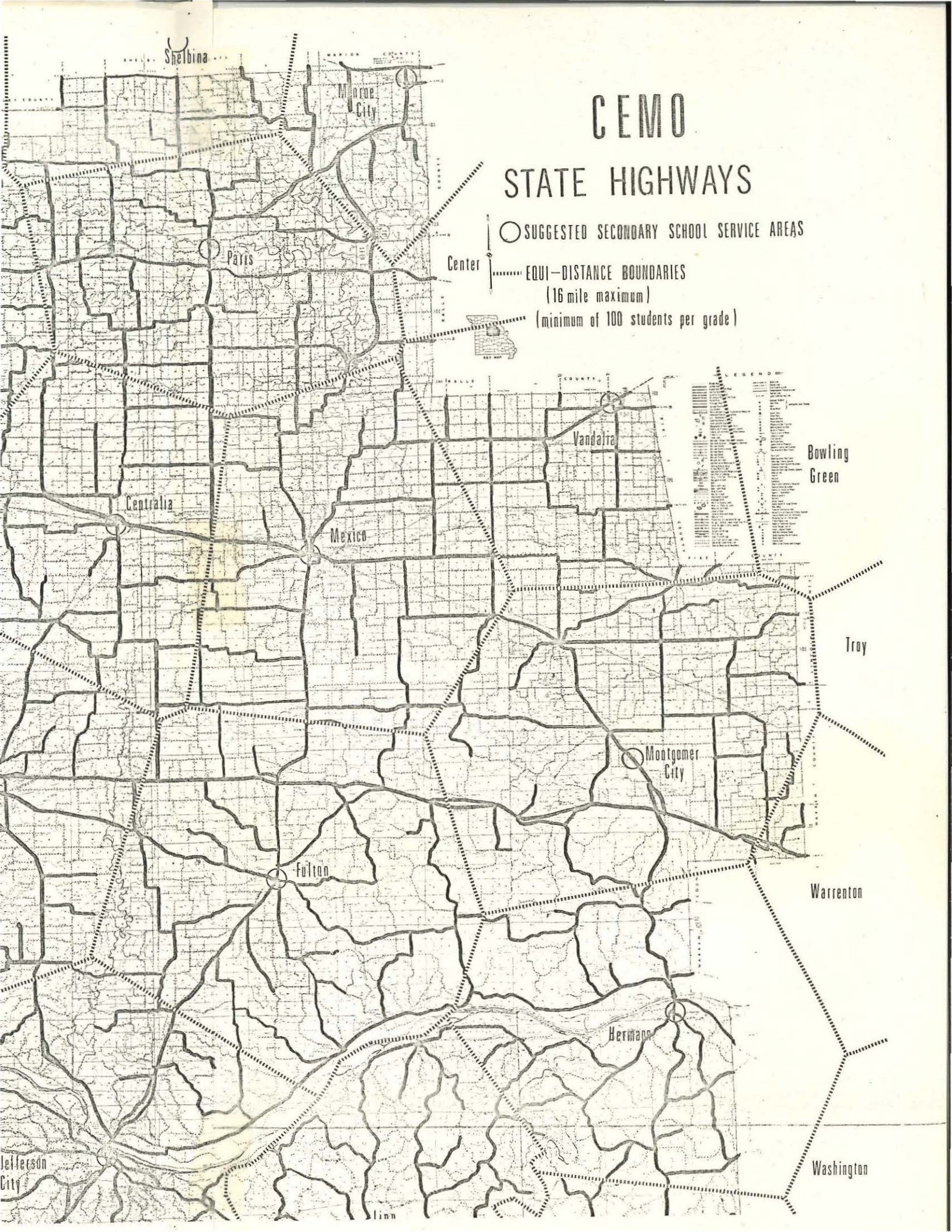
	1	2	3	4	5
	Local Taxes for Res.Stu. 1967-68	Tax Rate Per $100 Valuation 1967-68	App. H.S. Units offered '66	No.Pupils Total 1967-68	No. Teachers 1967-68
Sturgeon	374.05	3.15	37 1/4	239	19
Laddonia-Community	337.74	3.41	39	618	30
Pilot Grove	331.58	2.85	40 1/2	304	20
Madison	328.70	3.25	34	252	15
Cairo	328.66	3.40	37	299	19
Bunceton	321.58	2.65	29 1/2	209	13
Paris	320.74	3.00	47 1/2	802	41
Columbia	311.70	3.40	94 1/2	9,240	436
Prairie Home	305.54	2.60	37	193	24
Westran - Huntsdale	291.91	3.00	43	750	33
Moberly	289.88	3.90	44	2,753	123
Jamestown	275.44	2.75	29	188	13
Montgomery City	275.17	3.30	54	1,467	55
Boonville	263.62	3.00	56 1/2	1,587	75
Glasgow	262.90	2.30	40 1/2	419	26
Monroe City	261.52	3.20	47	1,154	60
Renick	255.34	3.65	32 1/2	194	16
Mexico	252.41	3.83	83	3,470	167
Auxvasse	246.54	3.40	34	1,060	51
Otterville	243.07	3.08	33 1/2	264	17
Fulton	233.70	4.10	61 3/4	2,372	117
Vandalia	231.60	3.25	53 3/4	1,266	61
Centralia	230.41	2.82	50 3/4	1,481	63
Wellsville	228.99	2.70	54	692	35
Tipton	208.33	3.00	42	783	38
California	200.29	2.95	45	1,078	47
New Franklin	193.45	2.75	42 1/2	597	31
Harrisburg	189.66	3.47	35	393	18
Hallsville	184.22	3.44	34 1/2	618	32
Mokane	177.93	3.35	42	523	24
Ashland	165.75	3.05	36 1/2	738	26
Fayette	146.97	2.50	46	962	50
New Bloomfield	144.30	3.35	29 1/2	409	19
Higbee	135.06	2.90	36	251	16
Ave.	263.04	3.31	44	1,106	53.
Median	253.88	3.115	41.25	655	31.

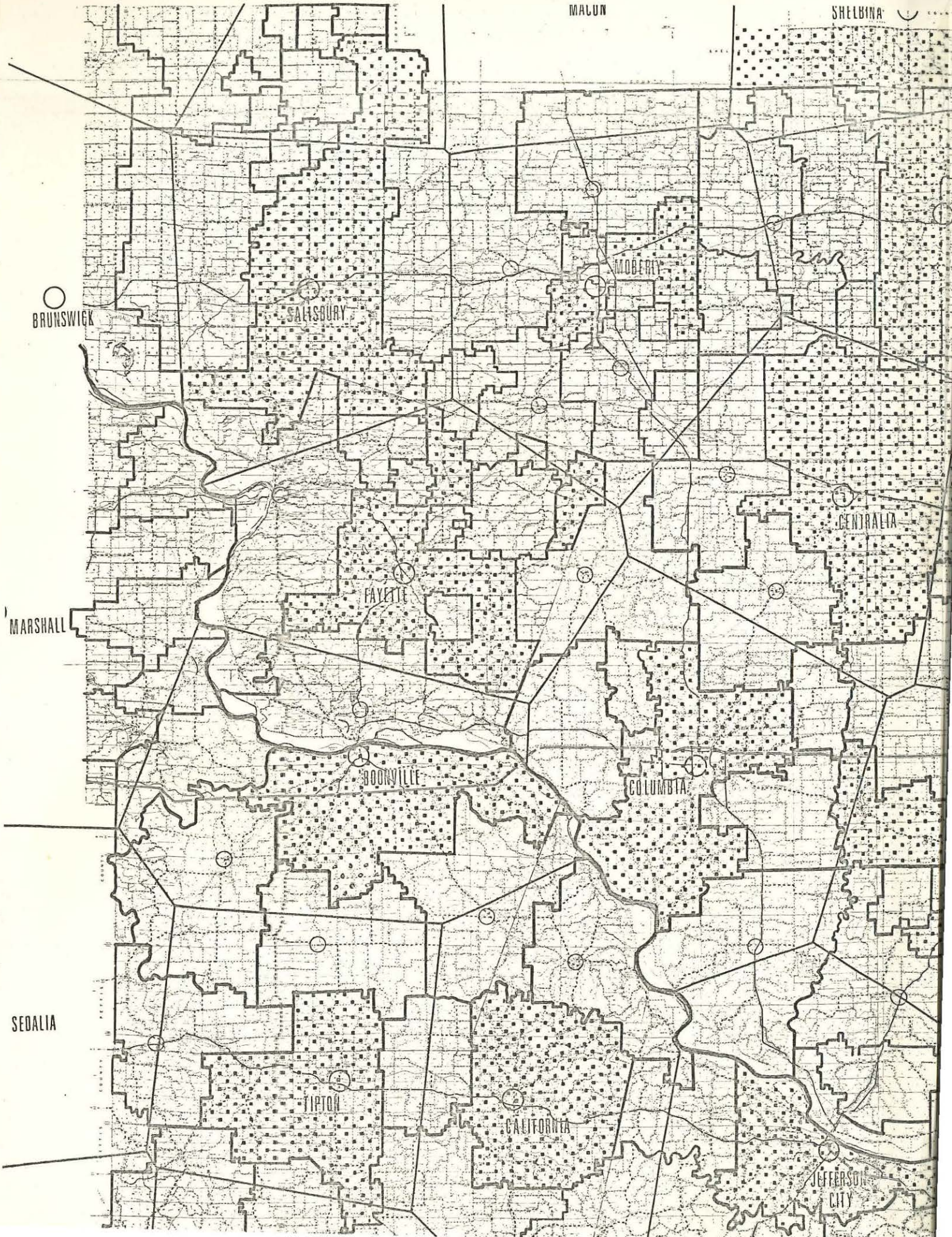
r President Student

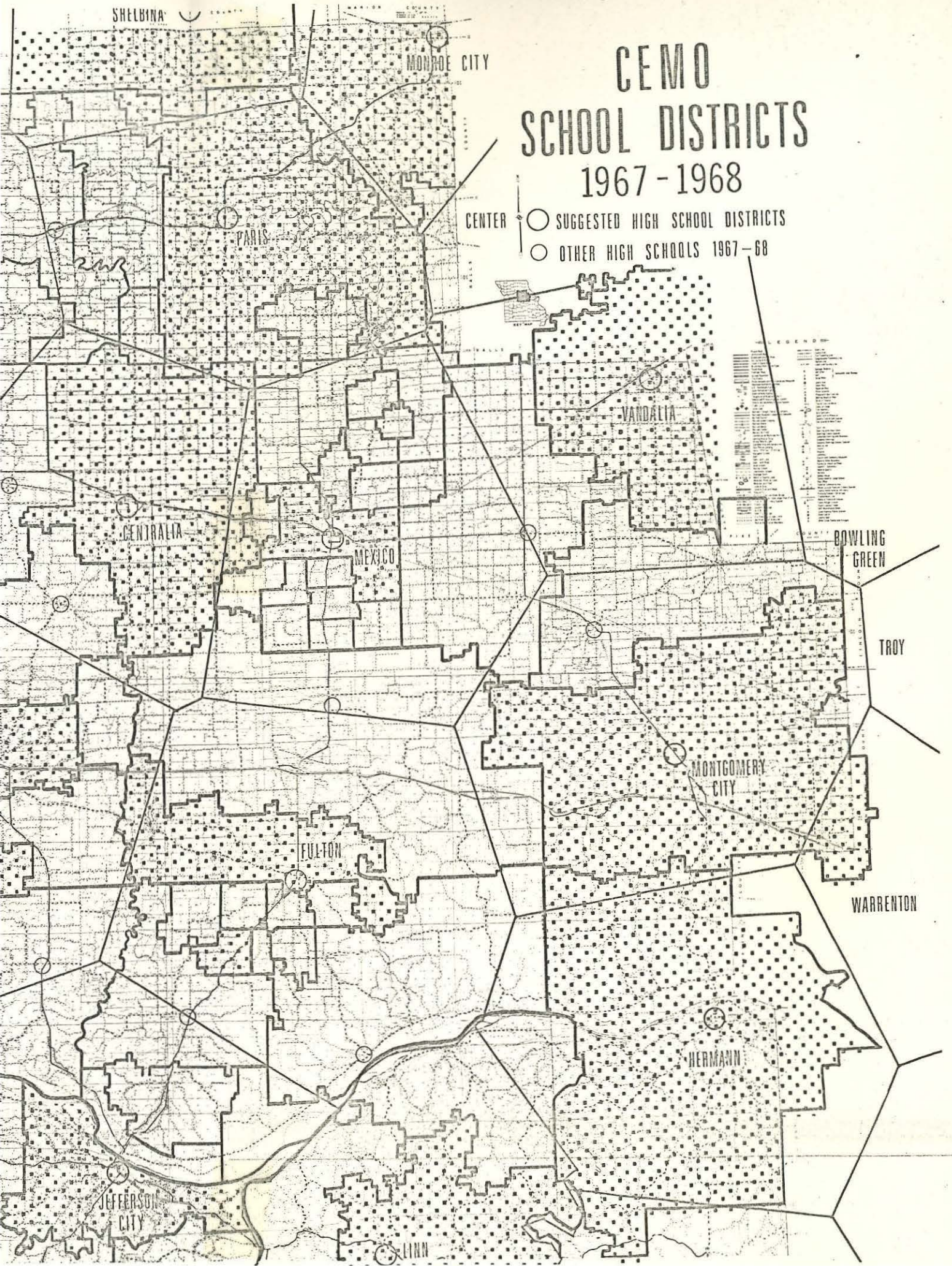
3	4	5	6	7	8	9	10	11

App. Units offered '66	H.S. No. Pupils Total 1967-68	No. Teachers 1967-68	Teacher-Pupil Ratio 1967-68
37 1/4	239	19	1-12.6
39	618	30	1-20.6
40 1/2	304	20	1-15.2
34	252	15	1-16.8
37	299	19	1-15.7
29 1/2	209	13	1-16.1
47 1/2	802	41	1-19.5
94 1/2	9,240	436	1-21.2
37	193	24	1- 8.0
43	750	33	1-22.7
44	2,753	123	1-22.3
29	188	13	1-14.5
54	1,467	55	1-26.6
56 1/2	1,587	75	1-21.1
40 1/2	419	26	1-16.1
47	1,154	60	1-19.2
32 1/2	194	16	1-12.1
83	3,470	167	1-20.7
34	1,060	51	1-20.8
33 1/2	264	17	1-15.5
61 3/4	2,372	117	1-20.2
53 3/4	1,266	61	1-20.7
50 3/4	1,481	63	1-23.5
54	692	35	1-19.7
42	783	38	1-20.6
45	1,078	47	1-22.9
42 1/2	597	31	1-19.2
35	393	18	1-21.8
34 1/2	618	32	1-19.3
42	523	24	1-21.8
36 1/2	738	26	1-28.3
46	962	50	1-19.2
29 1/2	409	19	1-21.5
36	251	16	1-15.6
44	1,106	53.8	1-20.5
41.25	655	31.5	1-19.95


Marcelin
Macon
Shelbina
Salisbury
Moberly
Brunswick
Centralia
Fayette
Marshall
Boonville
Columbia
Sedalia
Tipton
California
Jefferson City


CEMO
STATE HIGHWAYS
SUGGESTED SECONDARY SCHOOL SERVICE AREAS
Center
EQUI-DISTANCE BOUNDARIES
(16 mile maximum)
(minimum of 100 students per grade)
Shelbina
Monroe City
Paris
Vandalia
Bowling Green
Centralia
Mexico
Troy
Montgomer City
Fulton
Warrenton
Hermann
Washington
Jefferson City
Linn


MACON
SHELBINA
BRUNSWICK
SALISBURY
MOBERLY
CENTRALIA
FAYETTE
MARSHALL
BOONVILLE
COLUMBIA
SEDALIA
TIPTON
CALIFORNIA
JEFFERSON CITY


CEMO
SCHOOL DISTRICTS
1967 - 1968
CENTER
SUGGESTED HIGH SCHOOL DISTRICTS
OTHER HIGH SCHOOLS 1967 – 68
SHELBINA
MONROE CITY
PARIS
VANDALIA
CENTRALIA
MEXICO
BOWLING GREEN
TROY
MONTGOMERY CITY
FULTON
WARRENTON
HERMANN
JEFFERSON CITY
LINN